

COVID-19 in Chelsea:
A Glance Into One of the Hardest Hit Cities
And the Role of Intersecting Social Determinants of Health

community engagement collective action empowerment youth leadership

GreenRoots is a resident-led, grassroots, community-based organization working to achieve environmental justice and greater quality of life through collective action, unity, education and youth leadership across neighborhoods and communities. Originally established as a members' committee in 1994, GreenRoots became an independent organization in 2016 to more powerfully address environmental injustice, public health assaults and systems of oppression that have negatively impacted Chelsea and East Boston for decades. We do so through deep community engagement and empowerment, youth leadership and implementation of innovative projects and campaigns.

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Dear Friends, Colleagues and Allied Supporters:

As a grassroots organization working on environmental justice for almost three decades, we at GreenRoots knew that our communities of Chelsea and East Boston were far more likely to be at the frontline of disaster than wealthier, healthier communities. While we thought the devastation would come from a climate related event (and it likely still will), we never imagined that such devastating impacts would come from a global pandemic.

I will forever remember where I was, and whom I was with, when it began to settle in that COVID's wrath was just a few days from home. On that unseasonably warm March day on the streets of Eagle Hill in East Boston, Team GreenRoots was knocking on doors and talking about how our fellow neighborhoods would survive during a two week quarantine. How would folks afford two weeks of groceries, diapers, baby food and medicines? How would those who live paycheck to paycheck make ends meet? What about the families who rely on school meals?

We knew then we needed to act. We were not alone.

Chelsea's Pandemic Response is a model of how community comes together, works together and is better together. The collective effort of hundreds of city leaders, non-profit organizations, faith-based institutions, health centers, schools, front-line workers, fellow neighbors and so many more is nothing short of inspiring. It is a model worth sharing—a model of resilience and perseverance in the face of devastation.

What is most important, however, are the lessons we must learn from COVID-19. We must invest in people and prioritize community. We must right the wrongs of the past. The following report *COVID-19 in Chelsea: A Glance Into One of the Hardest Hit Cities And the Role of Intersecting Social Determinants of Health* synthesizes dozens of studies, research papers, statistics and more to highlight the compounded impacts which made Chelsea residents so vulnerable to COVID-19. None of this is new to any of us on the ground, but it is proof to the larger audience that we must prioritize people over profit. No longer can Black, Brown, Immigrant and Indigenous communities be disproportionately burdened with environmental hazards and harmful policies and practices.

This data will prove that we must invest in and prioritize increased green space, healthy and stable housing, language justice, health equity, food security, educational attainment, transit justice and more. We must enforce laws against polluters, racist practices, slumlords, and corporations preying on our neighborhoods.

With new possibilities for federal funding, we have a once in a generation opportunity to change course, to invest in our community and to uplift our ethnic and racial richness. I hope that future generations look back at this moment, see the pivotal change we collectively have made and say "they got it right." Let us allow this report to be the roadmap for Chelsea and other communities like ours. And let us all work together in community to ensure health equity for all.

Very Truly Yours,

Roseann Bongiovanni
Executive Director



Executive Summary

Deep inequities
within intersecting
social determinants
of health

In early-April 2020, community leaders in Chelsea, Massachusetts realized the city was being devastated by SARS-CoV-2 (COVID-19) in ways the rest of the state and the nation were not. In the early months of the pandemic, Chelsea's per capita infection rate (56.93 per 10,000 residents) was among the highest in the country. As infection rates soared, researchers from across the country requested access to the Chelsea community—to swab our nasal cavities, to sample our blood, and to monitor our waste water—in an effort to better understand what was happening in Chelsea. Yet, GreenRoots and other community leaders already understood why our frontline community was so impacted: deep inequities within our intersecting social determinants of health.

Peter Slavin, MD, Former President Massachusetts General Hospital

I am continually inspired by Chelsea's resiliency and grateful for the residents who serve on the front lines during this pandemic. When Chelsea became the epicenter of the COVID-19 outbreak, it became clear that resiliency alone would not prevent illness when other factors—housing, employment, food, and racism, to name a few—have a much greater impact on health. Together, I hope that we can foster the health and well-being of our communities by addressing these factors and the alarming health disparities they create.

Just two weeks before, GreenRoots, a resident-led environmental justice organization, together with other community partners and city officials, rallied to create the Chelsea Pandemic Response Team. Together, the collective effort worked to advocate for additional public and private resources; increase health care services; implement immediate financial relief programs; build critical support systems; and foster a powerful network of care and crisis response. All of this work is still in place and very evident today. And, our collective work and vision, with residents at the forefront, informs our understanding of pandemic-related impacts.

GreenRoots has set out to tell Chelsea's story—how and why our compounded social determinants of health led us to be impacted “first and worst” by COVID-19. This literature review highlights the myriad of inequities and social determinants that led to Chelsea's COVID-19 devastation, and which continue to impact our residents daily. The report highlights factors that affected community health pre-COVID, making residents more vulnerable, such as: Chelsea's high exposure to air contaminants like nitrogen oxide and particulate matter; high rates of pre-existing disease, particularly asthma, cardiovascular diseases and diabetes; rampant food insecurity; and Chelsea's severe lack of immune-boosting greenspace. And the report highlights factors that led to faster contagion and greater illness, such as 10% of Chelsea homes are overcrowded; 80% of Chelsea workers were deemed essential; and, tens of thousands of immigrants disenrolled from healthcare programs due to immigration-related fears. With this synthesized data, combined with our real-life experiences with COVID-19, we tell how our community's social and economic risk factors shaped the pandemic's impact on Chelsea.

This report examines Chelsea's vulnerabilities to COVID-19 including the intersecting factors of: demographic trends; fears related to immigration; systemic racism; extremely limited greenspace; poor indoor and outdoor air quality; pre-existing chronic health conditions; health disparities; housing instability; transit dependency, and profound food insecurity. This report provides insight as to why Chelsea was hit first and worst by COVID-19; and offers policy recommendations to avert future humanitarian disasters.



This report confirms that, collectively, we must prioritize the continued health and well-being of our residents in Chelsea; and, nationwide, systems must prioritize peoples' lives over profits. We must do so by implementing policy decisions and investments that benefit, rather than harm, our residents' health; and improve our social determinants of health. Gathering the existing research and data on Chelsea's social determinants of health reiterates what Chelsea leaders have known for a long time: our diverse, frontline, environmental justice population was uniquely poised to be devastated by a public health or climate emergency. We also know that NOW IS THE TIME TO ACT. We need to focus on improving Chelsea's long-term social determinants of health to prevent future disasters. Therefore, included here, and in each section of the literature review, are a set of policy and funding recommendations that GreenRoots believes will help to address the numerous challenges that brought us to this point.

Key Research Takeaways

1. The intersecting social determinants of health in Chelsea played a key role in COVID-19 infection rates and the severity of illness. This role can be categorized in two ways: long-term impacts that left residents vulnerable and in poorer health before the pandemic; and immediate impacts that increased infection spread and reluctance to seek care once COVID-19 hit.
2. Chelsea residents entered the pandemic with high rates of pre-existing health conditions, many of which made individuals more prone to serious COVID-19 infection. Long-term exposure to Chelsea's poor outdoor air quality (with high rates of nitrogen oxide and particulate matter) and poor indoor air quality (associated with older housing stock) affected residents' pulmonary and cardiac health. High rates of pre-pandemic food insecurity and continual lack of access to greenspaces reduced residents' overall health immunity.
3. Chelsea's overcrowded housing allowed the virus to spread faster. In Chelsea, 10% of housing units are considered overcrowded compared to 2% statewide. Lack of access to safe, healthy, affordable homes greatly impacted residents' health. The economic devastation of the pandemic only worsened the housing crisis, forcing families to triple up and/or "couch surf," further increasing overcrowding.
4. Racial inequity, immigration status, and language barriers played key roles. Latinx and Black populations are harder hit by COVID-19. 79% of Chelsea's population identifies as people of color; and 45% are foreign-born. Fear of immigration repercussions prevented many residents from seeking critical health care.
5. Employment also played a major role. 80% of Chelsea workers are deemed "essential," which required them to continue working in those early days, when access to preventative measures and knowledge was limited.

First and foremost, we strongly believe that: in order to address systemic health inequalities facing low-income, communities of color, massive investments must be made in improving the social determinants of health; additionally, existing protective policies must be enforced, and new policies created to prevent further systemic harm in communities like Chelsea.



We also believe that:

1. We are better together. Real change happens when all community voices are heard. Efforts to work together, across sectors and issue areas, must be supported and uplifted. Residents must be centered as the experts.
2. Deep-rooted systemic oppression and inequities must be identified and addressed. Racism, anti-immigrant sentiment and language barriers cannot drive public policy creation and enforcement any longer.
3. Chelsea's fragile environment needs to be protected and improved. Increasing green space, and planting and protecting trees must be a priority. Air quality improvements and climate change infrastructure must be implemented.
4. Keeping residents safely housed is critical. Anti-displacement measures that prevent evictions, preserve and expand affordable housing options, and protect residents' health must be implemented.
5. Health disparities, both short and long-term, must be addressed. Access to healthcare, food, and trusted multilingual health information must be straightforward. Long-term efforts to address and improve comorbidities must be comprehensive, community-wide and address the myriad of intersecting social determinants of health outlined in this report.

Please note that several important indicators (like mental health, childcare, substance use, and gender-based violence to name a few) all played a role in residents' experience during the pandemic but are not explicitly highlighted here.

**NOW
IS THE TIME
TO ACT**

COVID-19



6x

At its peak in April 2020, Chelsea residents had six times the infection rate of COVID-19 than the rest of the state.

Chelsea, Massachusetts was one of the first cities in the nation to experience the catastrophic impacts of the COVID-19 pandemic. At its peak, Chelsea had the highest positivity rate in the state for months on end. As the early epicenter in Massachusetts, Chelsea had an infection rate equal to or surpassing most other regions in the nation. Factors such as an essential workforce, racial inequities, significant overcrowded housing, pre-existing health conditions, high rates of poverty, industrial pollution, and various other inequalities contributed to higher risk of infection, serious illness, and death. The city and its residents remain vulnerable to these inequities related to the social determinants of health.

“The pandemic cannot be considered in isolation. The impacts of racism and discrimination on health are well established and measures must be taken to address the root causes of these disparities. At the same time, we need to urgently protect ethnic groups most at risk of adverse outcomes from COVID-19 [...]. The effects of racism, in particular systemic racism, are still not widely recognised and must be acknowledged by both healthcare professionals and policymakers so that more can be done to redress the balance and reduce these inequalities.”¹

- Dr. Mohammed Razai, Researcher at St. George's University of London

“I have been pretty articulate in declaring racism a serious public health threat [...]. This is not just about the color of your skin but also about where you live, where you work, where your children play, where you pray, how you get to work, the jobs you have. All of these things feed into people’s health and their opportunities for health.”⁹

- Dr. Rochelle Walensky, Director of the U.S. Centers for Disease Control

3x

Latinx, Native American and Black Americans are dying from COVID-19 at nearly three times the rate of White people.

The SARS-CoV-2 (COVID-19) virus spread in Chelsea at extremely alarming rates. Initial calculations from the City of Chelsea in April 2020, found Chelsea’s rate of infection to be 56.93 per 10,000 residents.² At its highest, the state of New York’s infection rate was at 52.4 per 10,000 residents.³ The Massachusetts Department of Public Health calculated that, at its peak in April 2020, Chelsea residents had six times the infection rate of COVID-19 than the rest of the state.⁴

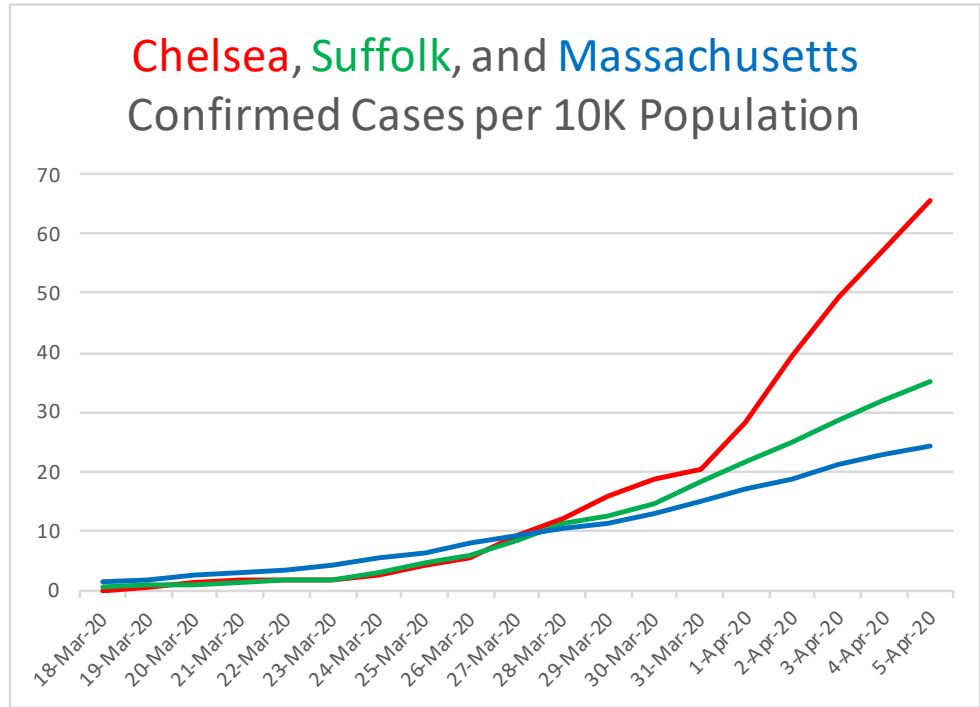


Figure 1. Chelsea COVID-19 Rates March–April 2020

Source: Allen, K. & Garney, M. (2021). *Confirmed COVID-19 Cases (per 10k) for the City of Chelsea, Suffolk County, and the State of Massachusetts. The City of Chelsea, the Department of Housing and Community Development.*

The COVID-19 pandemic has devastated populations, economies, and health systems worldwide. While the pandemic disrupted everyday life for most individuals, the impact on the most vulnerable populations was, and continues to be, more significant. “For the most disadvantaged communities, COVID-19 is experienced as a syndemic—a co-occurring, synergistic pandemic that interacts with and exacerbates their existing non-communicable diseases and social conditions.”⁵ The disparities in COVID-19 infection and mortality rates are a result of inequalities in chronic diseases and the social determinants of health.⁶ COVID-19 has laid bare the underlying social, economic and political inequalities that continue to burden our nation.

COVID-19, a disease easily spread through close contact from person to person and airborne transmission, is not the great equalizer as some have suggested.⁷ Comorbidities such as heart disease, lung problems, obesity and diabetes put some at higher risk if tested positive for the disease.⁸ These chronic diseases are not the sole risk factors for COVID-19 infection, hospitalization, and all-too-often death.

Communities around the country are addressing racism as a public health threat. In June of 2020, Boston Mayor Marty Walsh, declared racism an emergency and public health crisis, stating that racism has a direct negative impact on one's health outcomes.¹⁰ The Chelsea Black Community and Chelsea Young Adult Alliance motivated the City of Chelsea also to declare racism as a public health crisis and emergency.¹¹ Systemic and structural racism and underlying health and social inequities have put those in racial and ethnic minority groups at a higher risk of contracting and dying from COVID-19. The CDC reports some of the inequities in the social determinants of health including discrimination, occupation, housing, income and wealth gaps, and healthcare access and utilization contribute to the high morbidity and mortality rates of racial and ethnic minority groups.¹²

In the United States, COVID-19 has disproportionately impacted people of color.¹³ Once adjusted for age, the CDC reports as of November 2020, the rates for Latinx, Native American and Black Americans are respectively about 4.1, 4.0, and 3.7 times the rate of Whites.¹⁴ All three of these groups are dying from COVID-19 at nearly three times the rate of White people.¹⁵ Massachusetts is not an exception to this trend, with significantly higher death rates for Black, Latinx, and Asian populations compared to the White population. As of August 11, 2020, the age-adjusted mortality rates per 100,000 people in Massachusetts were Hispanic: 334.9, Black: 319.7, Asian: 139.1, and White: 105.4.¹⁶ As of March 2021, according to The Atlantic's COVID Tracking Project, in Massachusetts, Latinx communities make up 12% of the overall population but 28% of its identified COVID-19 cases, and are the group most likely to contract the disease.¹⁷ Additionally, the Black community makes up 7% of the overall population and is the group most likely to be hospitalized making up 11% of hospitalizations in the state.¹⁸ The disproportionate burden of COVID-19 morbidity and mortality is a direct reflection of the systemic inequalities racial and ethnic minorities face.¹⁹

12%
28%

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Sam

My family is a huge immigrant household with my parents, my sister, myself and my son. In early April 2020 both my mom and my sister who are healthcare workers contracted COVID. So that changed everything. My father is older, he is vulnerable and could not leave the house because he is part of that at-risk population. So in my family it was up to me to go grocery shopping, support my family in quarantine and isolation and take care of the family. I was grateful throughout all of this because I had community. I had the neighborhood wellness group which would meet to provide support to community members, and allowed me to be part of something bigger, translating, volunteering, using what I know from around the neighborhood to help others, translating all the flyers to Haitian creole. Within the school community I was part of the PTA for my son's school and we had a parents' wellness group.

The hardest part of COVID was seeing my mom sick. My mom is the commander-in-chief of our family and our household, so seeing her and my baby sister sick was so tough for me. My mom had really bad symptoms, the aches and the pains, she was sleeping a lot and not knowing what would happen to all of us was really scary!



Mayli

I went three times to the clinic. The first time they gave me Ibuprofen and Acetaminophen. On the third day I went again, my lungs hurt and I couldn't breathe. I told the doctor and she told me that there was no need to examine me. I told her I have these symptoms, the ones from the virus: headaches, body aches, and I couldn't breathe. I told her, please give me a medical exam. I begged. She told me not to worry, these are normal pains. She sent me home to my house with more pills, the same ones.

But I couldn't breathe and I felt really ill. By the third day, I fell really ill. I got so sick because they didn't want to examine me. I couldn't put up with the pain in my lungs. I couldn't breathe well.

But we couldn't call the ambulance. In the first place, we know a lot of families who are mixed-status or their immigration process is pending. This made me afraid. What if, in the hospital, they send me on a trip there, to my home country? This is a very serious thing. It's very grave. For that reason we did not call the ambulance. This brings fear to anyone, to be a "charge" to the government.

The next day, my daughter and my husband brought me to the clinic again, in the middle of the day. From there, they brought me to the hospital, unconscious. I spent 45 days in a coma, with 3 weeks in intensive care. From there, I did physical therapy for about a month. Even today, I am still recuperating.

The Latinx population, nationwide, has multiple risk factors for higher COVID-19 infection rates. Studies show that the Latinx population in the United States suffers from high rates of underlying conditions, including: diabetes, high blood pressure, and asthma. These comorbidities increase the likelihood of death due to COVID-19.

Cities and towns with larger communities of color have higher COVID-19 case rates.

COVID Case Rate per 10k residents as of July 29, 2020. 100 largest Massachusetts cities/towns.

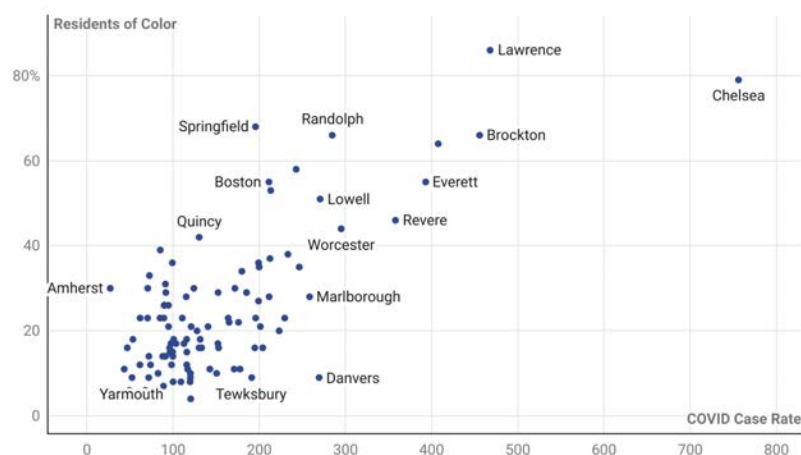


Figure 2.

Source: Boston Indicators. (2020, August 12). COVID-19's Disparate Impact on Low-Income Communities of Color. Boston Indicators & the Economic and Public Policy Research team at the UMass Donabue Institute. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/august/equity-brief

Those who live in vulnerable communities are more likely to die from COVID-19. A report from Surgo Ventures outlining “vulnerability” shows how well equipped a community is to handle the repercussions of COVID-19.²⁰ The COVID-19 Community Vulnerability Index overlays indicators of social vulnerability, such as socioeconomic status or language barriers, with indicators of vulnerability unique to the COVID-19 pandemic, such as access to healthcare and comorbidities.²¹ In Suffolk County, 65% of the Black population and 51% of the Latinx population are classified as very high or high vulnerability.²² In Chelsea, overall vulnerability to COVID-19 is “high,” and is significantly higher in census tracts where the majority of Black residents live.²³ In neighboring Boston, although the Black population is 25.2% of the overall population, they comprised 33% of COVID-19 deaths.²⁴ Chelsea’s Black and Latinx communities suffered greatly due to their high vulnerability to the pandemic. While 6.4% of Chelsea’s population identifies as African American, more than half of the population identifies as Latinx.²⁵

The Latinx population, nationwide, has multiple risk factors for higher COVID-19 infection rates. Studies show that the Latinx population in the United States suffers from high rates of underlying conditions, including: diabetes, high blood pressure, and asthma. These comorbidities increase the likelihood of death due to COVID-19. Furthermore, numerous studies demonstrate that the Latinx population is critical to the U.S. economy given the industries they are concentrated in; and that undocumented Latinx workers are among the workers deemed “essential” toiling in jobs that increase risk for COVID-19 exposure. Also, the undocumented population is excluded from receiving benefits under the CARES act. Fear generated due to the Public Charge ruling is an added barrier for immigrants when it comes to seeking healthcare and public assistance. *[See Immigrants and Immigration Policy for more information.]* The Latinx population and undocumented individuals are among the most vulnerable and the most disproportionately impacted; this will continue to deepen as the pandemic rages on.²⁶

Nationally, the Latinx population represents 34.6% of all COVID-19 positive cases, while representing only 14% of the U.S. population. In Chelsea, 67% of the total population identifies as Latinx.²⁷ Public health data analysis from March-August 2020 shows that, in Chelsea, the most likely to get COVID-19 are Latinx essential workers in their 40’s, and retired persons. Those with asthma, those who are unemployed, and retired persons are much more likely to be hospitalized.²⁸ ²⁹ The presence of cardiovascular comorbidities is also highly correlated with mortality in outcomes. Chelsea’s rates of cardiovascular disease and asthma are significantly higher than state averages.³⁰

Asymptomatic spread may have contributed to the high rates of infection in Chelsea. Researchers at Massachusetts General Hospital found that nearly one third of 200 blood samples taken in Chelsea in April of 2020 had antibodies present. This means residents may show no symptoms of COVID-19 but are, in fact, infected, and giving opportunity for the virus to continue to spread.^{31,32} By the second wave, which is said to have begun in November 2020 and lasted through January 2021, cases in Chelsea surged to an average of over 250 cases a week.³³ During this wave, younger residents aged 30 to 50 were testing positive and hospitalized due to the virus; mortality decreased; and essential and non-essential workers were the bulk of all cases.³⁴

67%

In Chelsea, 67% of the total population identifies as Latinx. Public health data analysis from March-August 2020 shows that, in Chelsea, the most likely to get COVID-19 are Latinx essential workers in their 40’s, and retired persons.

1/3

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Many Chelsea residents are people of color, low-income, frontline, essential workers who live in poverty and overcrowded housing and have high rates of comorbidities. These factors are all associated with the likelihood of being infected with COVID-19 and are likely to drive the spread of the disease as well. Along with these social determinants, systemic racism, immigration policy, health status, air quality and food security are all additional risk factors.



RISK FACTORS FOR SPREAD OF COVID-19

- Low-income
- Frontline essential workers
- Live in poverty
- Overcrowded housing
- High rates of comorbidities
- Systemic racism
- Immigration policy
- Air quality
- Food security



Researchers at the UMass Donahue Institute found the strongest predictors of COVID-19 rates were **overcrowded housing, average household size, per capita income and population density.**³⁶ Each of these factors plays a role in Chelsea's experience with COVID-19 specifically:

35/10K



For each additional percentage point of households in a community that are "overcrowded," the number of COVID-19 cases increases by 35.0 per 10,000 members of the population.

3.6/10K



For each additional thousand dollars of per capita income, the number of COVID-19 cases decreases by 3.6 per 10,000 members of the population.

11.8/10K



For each additional 1,000 persons per square mile, the number of COVID-19 cases increases by 11.8 per 10,000 members of the population.

24/10K



As the household size increases by 0.1, the number of COVID-19 cases increases by 24 per 10,000 members of the population.

Each of these predictors, including others, contributed to Chelsea being one of the first communities to be hit the worst by the pandemic. As of July 29, 2020, the Chelsea COVID-19 case rate was significantly higher than the Massachusetts state total. In Chelsea, 10% of homes are "crowded" compared to only 2% statewide. Chelsea's number of frontline workers is 1.5 times higher than the state rate and 79% of residents are considered people of color, compared to 28% statewide.³⁷ Lastly, 18% of households are in poverty compared to 11% at the state level. *[See Demographics and Housing for more information.]*

While COVID-19 rates improved and access to vaccinations increased in the Spring of 2021, the trends identified in the early stages continued throughout the pandemic. Race, income, and housing status continued to be strong predictors of infection and serious illness. Those with pre-existing health conditions, exacerbated by environmental health impacts, were strongly affected.

Policy Recommendations

- 1. All public health information must be concise and multilingual. Information must be presented through multiple platforms, including: radio, television, print media, schools, social media, water bill inserts, videos, text messages and most importantly through trusted community leaders, community-based organizations, faith-based institutions and other civic partners.**
- 2. All COVID-19 testing must continue to be free with no questions asked. Testing should be made accessible with ADA compliant locations, extended evening and weekend hours, with mobile testing and home visits to those who are or may have become homebound.**
- 3. Vaccine access and vaccine education must be equitable. Populations that have been disproportionately impacted must be at the center of the vaccination strategies with trusted, multilingual, intergenerational, community partners leading the outreach.**
- 4. Researchers who are looking to understand the role of COVID-19 in the Chelsea community must be non-invasive, non-extractive and respectful while utilizing community based participatory research practices when possible.**
- 5. There must be health protections for all workers; and employers should offer paid time off for vaccination appointments and for post-vaccine side effects.**

References

1. St. Georges' University of London. (2021, January 15). Experts Consider the Role of Systemic Racism in Exacerbating Covid-19 Health Inequalities. Retrieved from <https://www.sgul.ac.uk/news/experts-consider-the-role-of-systemic-racism-in-exacerbating-covid-19-health-inequalities>
- 2-3. City of Chelsea analysis of DPH Statistics
4. The Commonwealth of Massachusetts (2020, April 22). Count and Rate (per 100,000) of Confirmed COVID-19 Cases in MA by City/Town: January 1, 2020 - April 22, 2020. Massachusetts Department of Health, Coronavirus Disease 2019 (COVID 19) Cases in MA. Retrieved from <https://www.mass.gov/doc/confirmed-covid-19-cases-in-ma-by-citytown-january-1-2020-april-22-2020-pdf/download>
- 5-6. Bambra, C., Ford, J., Riordan, R., & Matthews, F. (2020). The COVID-19 pandemic and health inequalities. *Journal of Epidemiology and Community Health*, 74(11). Retrieved from <https://jech.bmj.com/content/74/11/964.info>
7. Centers for Disease Control and Prevention. (n.d.). Health Equity Considerations and Racial and Ethnic Minority Groups. Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fracial-ethnic-minorities.html#anchor_1595551043298.
8. Maragakis, L. (2020, June 25). Coronavirus and COVID-19: Who is at higher risk? Johns Hopkins Medicine. Retrieved from <https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/coronavirus-and-covid19-who-is-at-higher-risk>.
9. Park, A. (2021, April 8). Exclusive: CDC Director Rochelle Walensky Unveils Agency Initiative to Address Racism in Health. *Time Magazine*. Retrieved from <https://time.com/5953200/exclusive-cdc-director-rochelle-walensky-racism-health-initiative/>
10. Office of the Mayor, & City of Boston, An Executive Order Declaring Racism an Emergency and Public Health Crisis in the City of Boston 1-3 (n.d.). Retrieved from: <https://www.boston.gov/sites/default/files/file/2020/06/racism-as-public-health-crisis-ocr.pdf>
11. Chelsea, MA, Office of the City Manager (2021, July). The State of the City. The City of Chelsea. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/pages/sotc_2021.pdf?fbclid=IwAR0Sfj_OjsHwxGy01H_0Uw2JD-FkcvmfOzBeXkbjWunLMxttUPkSNct0DAI

12. Centers for Disease Control and Prevention. (n.d.). Health Equity Considerations and Racial and Ethnic Minority Groups. Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fneed-extra-precautions%2Fracial-ethnic-minorities.html#anchor_1595551043298.
13. Sequist, T. D., (2020, July 6). The Disproportionate Impact of COVID-19 on Communities of Color. NEJM Catalyst Innovations in Care Delivery. DOI: 10.1056/CAT.20.0370
- 14-15. Centers for Disease Control and Prevention. (n.d.). Risk for COVID-19 Infection, Hospitalization, and Death By Race/Ethnicity. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>
16. Melnik, M., & Raisz, A.. (2020, December 18). Across Two Waves: COVID-19 Disparities in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities.
- 17-18. Massachusetts: All Race & Ethnicity Data. The COVID Tracking Project. (n.d.). Retrieved from <https://covidtracking.com/data/state/massachusetts/race-ethnicity>.
19. Goldman, N., & Andrasfy, T. (2020). Reductions in 2020 US life expectancy due to COVID-19 and the disproportionate impact on the Black and Latino populations. MedRxiv The Preprint Service for Health Sciences . <https://doi.org/https://doi.org/10.1101/2020.07.12.20148387>
- 20-23. Bringing Greater Precision to the COVID-19 Response. (n.d.). Surgo Venture, Precision for Covid. Retrieved from <https://precisionforcovid.org/ccvi>.
24. COVID-19 Health Inequalities Task Force (2021, June 30). Racial Date on Boston Residents COVID-19 Cases. The City of Boston. Retrieved from <https://www.boston.gov/departments/mayors-office/racial-data-boston-resident-covid-19-cases>
25. United States Census Bureau (2019). Chelsea city profile, 2019 American Community Survey 5-Year Estimates. Retrieved from <https://data.census.gov/cedsci/profile?g=1600000US2513205>
26. Labor Council for Latin American Advancement & Migente Support Committee (2020). The Impact of COVID-19 on the Latino Population. Retrieved from https://assets.website-files.com/5e5f2e17e96a34dcf9b586b4/5e984eab4dd4ffba712e7906_COVID%20_%20Report%20%5BFinal%5D%20for%20web.pdf
27. United States Census Bureau (2019). American Community Survey 2015-2019 5 Year Estimates of Chelsea, MA. Retrieved from <https://data.census.gov/cedsci/table?q=Chelsea%20city%20Populations%20and%20People&tid=ACSDP5Y2018.DP05>
- 28-29. Alonso, C., & Basada, P., (2020, October). Data Analysis Report to the City of Chelsea: COVID Positive Test (March 3, 2020- August 9, 2020). Harvard T.H. Chan School of Public Health & Boston University School of Public Health & Academic Public Health Volunteer Corps. Retrieved from https://www.chelseama.gov/sites/g/files/vyhli396/f/news/final_data_analysis_report_city_of_chelsea_unlinked.pdf
30. The Commonwealth of Massachusetts (2020, April 22). Count and Rate (per 100,000) of Confirmed COVID-19 Cases in MA by City/Town: January 1, 2020 - April 22, 2020. Massachusetts Department of Health, Coronavirus Disease 2019 (COVID 19) Cases in MA. Retrieved from <https://www.mass.gov/doc/confirmed-covid-19-cases-in-ma-by-citytown-january-1-2020-april-22-2020-pdf/download>
31. Saltzman, J. (2020, April 17). For nearly a third of 200 blood samples taken in Chelsea show exposure to Coronavirus. The Boston Globe. Retrieved from <https://www.bostonglobe.com/2020/04/17/business/nearly-third-200-blood-samples-taken-chelsea-show-exposure-coronavirus/>
32. Chang, C., & Naranbhai, V. (2020, September 9). High Seroprevalence of Anti-SARS-CoV-2 Antibodies in Chelsea, Massachusetts. The Journal of Infectious Diseases. Issue 12, 15 (1955–1959). <https://doi.org/10.1093/infdis/jiaa579>
- 33-34. Alonso, C., & Basada, P., (2021, January/February). Data Analysis Report to the City of Chelsea: COVID Positive Test (September 1, 2020- January 19, 2021). Harvard T.H. Chan School of Public Health & Boston University School of & Metropolitan Area Planning Council. Retrieved from https://www.chelseama.gov/sites/g/files/vyhli396/f/news/final_data_analysis_report_city_of_chelsea_unlinked.pdf
- 35-36. Melnik, M., & Raisz, A.. (2020, December 18). Across Two Waves: COVID-19 Disparities in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities.
37. Boston Indicators. (2020, August 12). COVID-19's Disparate Impact on Low-Income Communities of Color. Boston Indicators & the Economic and Public Policy Research team at the UMass Donahue Institute. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/august/equity-brief

Demographics



79%

79% of Chelsea residents are Latinx, Black, Asian, and/or Multi-racial.

Research on COVID-19 infection rates continues to point to demographic trends as key indicators of potential higher infection rates. We celebrate Chelsea's rich ethnic and racial diversity, our sense of community which unites us, and our history and role as a Gateway City for newly arrived immigrants. Our community's demographics: low-income neighborhoods of color, high number of essential workers, lower traditional education levels, and Limited English Proficiency are contributing factors to COVID-19 transmission. The additional demographic which affects Chelsea's ability to recover from the pandemic is the overall population number, impacted by an understood Census undercount, and how it affects the flow of federal and state relief dollars.

>25%

Chelsea Public Schools estimates its foreign-born population to be undercounted by 25-30%.

39,992

Total reported population of Chelsea, the state's smallest city and second most densely populated

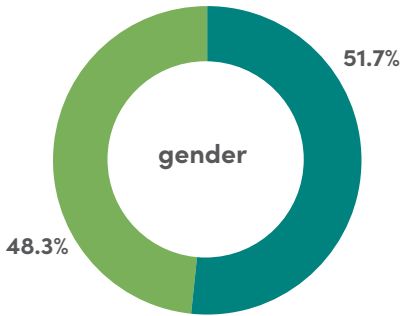


Population

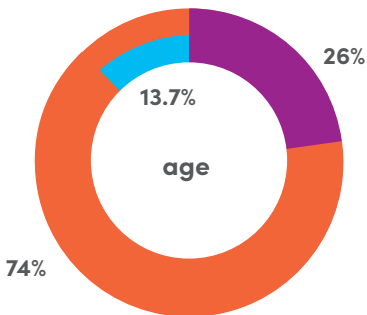
Chelsea is a city in Suffolk County, Massachusetts. Chelsea is the state's smallest city, occupying a land area of 1.8 square miles and is the second most densely populated in the state.^{1,2,3} The city of Chelsea has a total reported population of 39,992; American Community Survey data reports 51.7% of the Chelsea population identifies as male and 48.3% identifies as female.⁴ 26% percent of the population is under the age of 18, 74% is over the age of 18, and 13.7% is 60 years and over.⁵ Of the total population, 67% are Latinx, 48.4% are White, 32.8% are two or more races, 6.4% are Black, and 4% are Asian.⁶ Many Chelsea residents are immigrants.⁷ The 2010 census identified 45% of Chelsea's population to be foreign-born. Of those who have immigrated and made Chelsea their home, many are undocumented. [See *Immigrants and Immigration Policy for more information.*]

Researchers at Boston Indicators estimate 15-20% of the state's foreign-born population is undercounted in the census. Chelsea Public Schools estimates this percentage to be higher, at about 25-30% undercounted. Researchers and community leaders estimate there may be as many as 60,000 people living in the city.⁸ In non-pandemic times, an inaccurate population count can deprive state and localities of vital government funding and resources. Federal funding, like the CARES Act, provides funding based on population size.⁹ In the time of a major public health and economic crisis, an undercount is devastating, as federal relief funds are crucial. Through the CARES Act, Chelsea was allocated up to \$3.5 million based on the official population count of approximately 40,000. In the neighboring city of Revere, with an official population count of 53,000, they were eligible for \$4.7 million. With upwards of 10,000 to 20,000 residents possibly undercounted, the city of Chelsea is losing critical dollars toward essential COVID-19 assistance.¹⁰

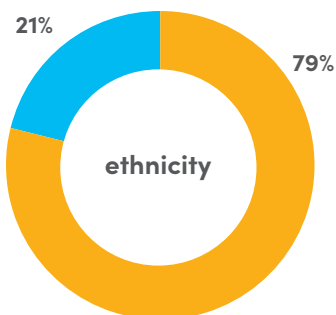
After intensive community advocacy efforts, in June 2021, Governor Baker announced that he would allocate \$109 million in additional funding to four cities, including Chelsea, from the federal American Rescue Plan Act (ARPA). These were among some of the cities that were hit hardest by the pandemic but were "shortchanged" in Biden's \$1.9 trillion national COVID-19 relief bill. The funding formula for ARPA was based on the federal Community Development Block Grant (CDBG) program formula and a per-capita basis which created disparities in distributions among cities and towns. Chelsea is set to receive \$28.5 million in additional funding directly from the state.¹¹ [See *Chelsea's Collective Response for more information.*]



- Male
- Female



- < age 18
- > age 18
- > age 60



- Latinx, Black, Asian and/or Multi-racial
- White

Employment

Chelsea became a hotspot for COVID-19 early on within the pandemic. One leading factor is that approximately 80% of Chelsea’s employed population work in occupations deemed “essential” by Governor Baker’s stay-at-home order.^{12,13} This was significantly higher than surrounding areas, such as Boston, in which only 57 percent were deemed essential.^{14,15} Essential workers continued working, while all others stayed home and limited their exposure. Governor Baker declared the workforce in the production and service sectors as “COVID-19 Essential Services.”¹⁶ In Massachusetts, frontline or essential workers have lower levels of education and are more likely to be immigrants, people of color, and female.¹⁷ The American Civil Liberties Union (ACLU) of Massachusetts’ analysis of data additionally demonstrates that, within Chelsea, census tracts with the highest proportion of Latinx residents align with tracts containing the highest percentage of workers employed in essential jobs.¹⁸ Social distancing, remote work, and staying at home to prevent the spread of COVID-19 were not options for Chelsea workers.

80%

80% of Chelsea’s employed population work in occupations deemed “essential” by Governor Baker’s stay-at-home order.

Cities with more frontline workers have higher COVID rates.

COVID Case Rate per 10k residents as of July 29, 2020. 100 largest Massachusetts cities/towns.

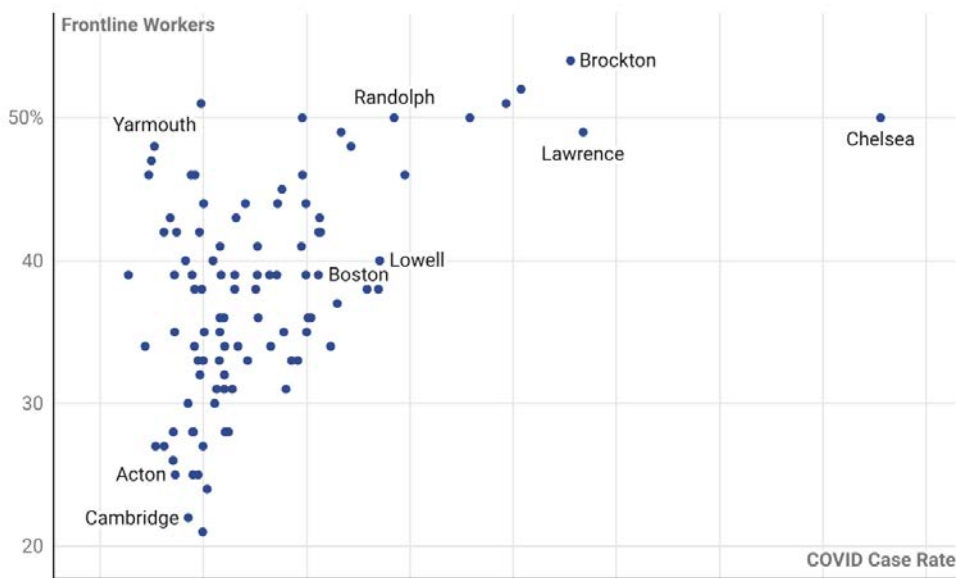


Figure 1.

Source: Melnik, M., & Raisz, A. (2020, December 18). *Across Two Waves: COVID-19 Disparities in Massachusetts*. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities



In Massachusetts, frontline or essential workers have lower levels of education and are more likely to be immigrants, people of color, and female.



Mayra

Immigrants and TPS recipients are frontline workers. We had to continue working because we could not do our work from home. The work is physical. For this reason, we were the community with the highest rates of contagion.

CHELSEA WORKFORCE'S MOST COMMON INDUSTRIES

- Accommodation and Food Services
- HealthCare and Social Assistance
- Retail trade

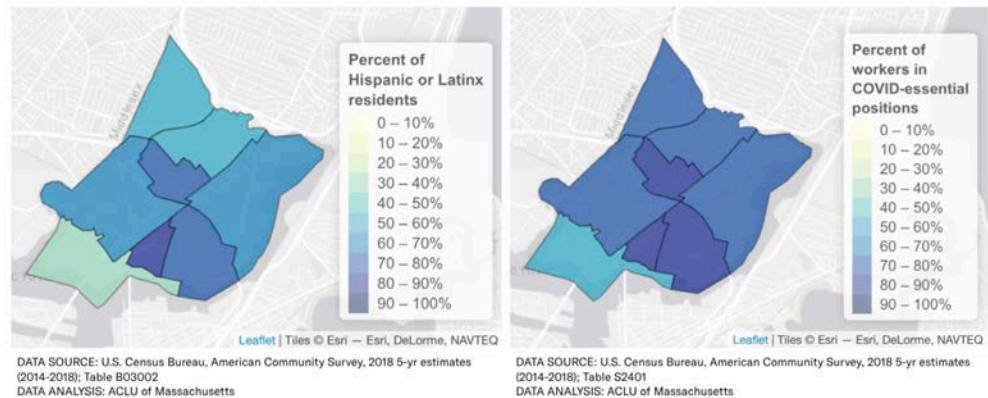


Figure 2. Percent of Latinx Residents versus Percent of COVID-essential Workers

Source: Chambers, L. (2020, April 7) *Data Show COVID-19 Is Hitting Essential Workers and People of Color Hardest. The Data for Justice Project. American Civil Liberties Union (ACLU) of Massachusetts. Retrieved from https://data.aclum.org/2020/04/07/covid-19-disproportionately-affects-vulnerable-populations-in-boston/?ms_aff=MA&initms_aff=MA&ms_chan=tw&initms_chan=tw*

The pandemic exacerbated employment inequities. As businesses began to close, the unemployment rate rose drastically, and rising racial gaps within the labor market became apparent. In June 2020, the unemployment rate in Massachusetts was 17.7%, which at the time was the highest in the country.¹⁹ For the Latinx population in Massachusetts, at this time, the unemployment rate was approximately 30%, which is more than double the rate for the White population in the state.²⁰ According to the Boston Indicators, lower wage workers in Massachusetts who make a weekly income of \$400-\$699, made up the largest share of unemployment claims between the months of March and July 2020.²¹ In June 2020, the unemployment rate for the Chelsea workforce hit 20.9%, which was astronomically high when compared to the year before at 2.9%.²² By September 2020, the unemployment rate in Chelsea was 13.4%, still one of the highest in the state.²³



Figure 3. Chelsea Unemployment Rate from January 2019 to July 2021

Source: Y-Charts. (2021). Chelsea, MA Unemployment Rates. Retrieved from https://ycharts.com/indicators/chelsea_ma_unemployment_rate

The most common industries in which Chelsea’s workforce is employed includes: Accommodation & Food Services (2,778 people),²⁴ Health Care & Social Assistance (2,607 people), and Retail Trade (2,401 people). Workers in these industries experienced the immediate impact of the economic shutdown with the highest share of unemployment claims.²⁵ The Latinx population works in many of these industries. If not faced with the greatest layoffs, they were at greater risk of exposure to the virus. Other cities which have a large Latinx population, like Chelsea, similarly experienced higher rates of COVID-19 transmission.²⁶ Essential workers risked their lives to keep our communities safe and functional but were left stressed, sick, and unable to meet their basic needs.²⁷

Poverty

The median income for a Chelsea household is \$56,802 compared to the state of Massachusetts with a median income of \$81,215.²⁸ In Chelsea, 45.43% of households have an annual income of less than \$50,000 compared to 32.57% of people in the state of Massachusetts.²⁹

Pre-pandemic, 18.1% of the Chelsea population (for whom poverty status is determined) lived below the federal poverty line.³⁰ 53.8% of the population lived at or above 200% of the poverty level.³¹ Furthermore, 24.5% of related children in one household under the age of 18, and 23.6% of the senior population aged 60 years and older lived in poverty.³² The largest demographic of individuals living in poverty are females ages 25 to 34. Lastly, 42% of the Latinx population in Chelsea lives in poverty. There is a direct correlation between income level and COVID-19 infection rates. Researchers at the UMass Donahue Institute found that for every additional \$1,000 in per capita income, the number of COVID-19 cases per 10,000 decreases by 3.6.³⁵

For each additional thousand dollars of per capita income, the number of COVID cases per 10,000 people decreases by 3.6

Model-adjusted COVID-19 cases per 10,000 people by per capita income in MA’s 100 largest cities and towns as of November 27th, 2020

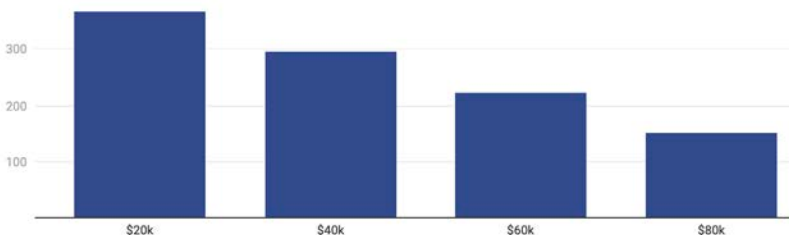


Figure 4.

Source: Melnik, M., & Raisz, A. (2020, December 18). Across Two Waves: COVID-19 Disparities in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities

20.9%

In June 2020, the unemployment rate for the Chelsea workforce hit 20.9%, which was astronomically high when compared to the year before at 2.9%.

45.4%

In Chelsea, 45.4% of households have an annual income of less than \$50,000.

42%

42% of the Latinx population in Chelsea lives in poverty.

CPS students:

87.6%
Latinx

83.4%
students whose first language
is not English

63.9%
economically disadvantaged

82.8%
considered "high needs"



Samantha, Chelsea High School Student. Stephanie, Chelsea High School Graduate.

Education

There are 9 public schools in the Chelsea Public School (CPS) system.³⁶ This includes the John Silber Early Learning Center, which serves children in Pre-K to 1st grade, and the Mary C. Burke Elementary School Complex, which accommodates four elementary schools located in a single building complex. There are three middle schools: Browne Middle, Clark Ave Middle, and Wright Academy as well as two high schools: Chelsea High School and Chelsea Opportunity Academy. Additionally, there are two charter schools: Excel Academy and Phoenix Charter Academy, also serving the students of Chelsea. In 2020, there were 6,255 students enrolled in the CPS system.³⁷ 87.6% of these students identify as Latinx and 83.4% of students' first language is not English.³⁸ 42.5% of students are English language learners; 63.9% are economically disadvantaged and 82.8% are high needs students.³⁹

In 2019, there was a 64.1% graduation rate, with an annual dropout rate of 5%.⁴⁰ 73.4% of graduates enrolled in a post-secondary institution.⁴¹ In 2019, 26% of Chelsea High School graduates enrolled in a 4-year private or public college compared to 61% of Massachusetts high school graduates.⁴² Additionally, 40% of Chelsea High School graduates enrolled in a 2-year public college such as Bunker Hill Community College, which is located in Charlestown, and has a satellite campus in Chelsea.⁴³ Of the population aged 25 years and over, 68.9% are high school graduates or higher and 18.5% have a Bachelor's degree or higher.⁴⁴ Only 9.9% of the Latinx population in Chelsea has a Bachelor's degree or higher.

Diversity Data Kids' Child Opportunity Index maps and measures the conditions children need in order to grow and live healthy lives (such as good schools, access to healthy food, greenspace and clean air).⁴⁵ Black, Latinx, and Indigenous children in the U.S. do not have equitable access to these conditions.⁴⁶ Education is a childhood opportunity related measurement, assessed from "very high" to "very low."⁴⁷ For census tracts within Chelsea, the Child Opportunity Index for education is "very low." To measure opportunity level in regards to education, indicators such as graduation rates, school poverty, and math and reading proficiency are evaluated. In the Boston-Cambridge-Newton, MA metro area, which includes Chelsea, over 50% of Latinx and Black children have very low opportunity levels for education compared to approximately 50% of White children who have "high" or "very high" opportunity levels.⁴⁸

26%
40%

In 2019, 26% of Chelsea High School graduates enrolled in a 4-year private or public college and 40% of graduates enrolled in a 2-year public college.

Public Transportation

Low car-ownership in Chelsea causes residents to rely heavily on public transportation.

Approximately one third of residents do not own a car, and therefore must rely on the Massachusetts Bay Transportation Authority's (MBTA) bus and train routes or on rideshares to transport them.⁴⁹

Chelsea's workforce, many of whom were deemed "essential" during the pandemic, relied heavily on public transit in order to get to and from work. Additionally, others who were not commuting, relied and continue to rely on public transit to get food, seek healthcare and other crucial services.⁵⁰

Existing data suggests riding public transit was not associated with COVID-19 transmission and spread of infection; however relying heavily on public transportation is another health vulnerability impacting Chelsea residents.⁵¹ In September 2019, LiveableStreets Alliance released their report *64 Hours: Closing the Bus Equity Gap*. The report outlined how Black and Latinx riders on average spend 64 and 10 more hours, respectively, per year aboard MBTA buses compared to their fellow White passengers.⁵² In Chelsea, 55% of residents spend 30 or more minutes commuting to work.⁵³ The transit system serving Boston and the Greater Boston area is far from equitable.

Overcrowding, dropped rides, increased ticket prices, and lack of bus shelters are examples of obstacles leading to inequities.^{54,55,56} Chelsea's most utilized route, the 111 bus suffers from high rates of overcrowding, leaving little space between passengers whether they are sitting or standing. In the fall of 2018, the 111 bus was overcrowded 21% of the time, this was the worst in the entire MBTA system.⁵⁷ The 111 bus also had the second highest percentage of canceled trips in 2016 at 5.2%.⁵⁸ When rides are unexpectedly cancelled, subsequent rides are frequently overcrowded. Accessible, affordable, and sustainable transportation options are necessary in order to achieve equity.⁵⁹

Three bus lines, the 111, 116, and 117, which serve Chelsea are among the most heavily used MBTA routes. Passenger survey data demonstrates that 61% of 111 bus riders and 65% of 114 (which also serves Chelsea), 116 and 117 bus riders use the bus to get to and from work.⁶⁰ Additionally, a majority of riders identify as a minority and/or low-income.⁶¹ In 2018, the 111 bus route had an average weekday ridership of more than 12,000 people.⁶² In March 2020, the MBTA announced it would be reducing service in response to COVID-19 due to dropped ridership.⁶³ Advocacy efforts by GreenRoots and others helped to reverse this decision, explaining fewer buses would contribute to overcrowding.⁶⁴ A month into the pandemic in April 2020, the 111 was carrying 33% of its pre-COVID-19 ridership, one of the smallest declines in ridership seen across all bus routes.⁶⁵

1/3

One third of residents do not own a car.

Chelsea's most utilized route, the 111 bus suffers from high rates of overcrowding, leaving little space between passengers whether they are sitting or standing. In the fall of 2018, the 111 bus was overcrowded 21% of the time, this was the worst in the entire MBTA system.



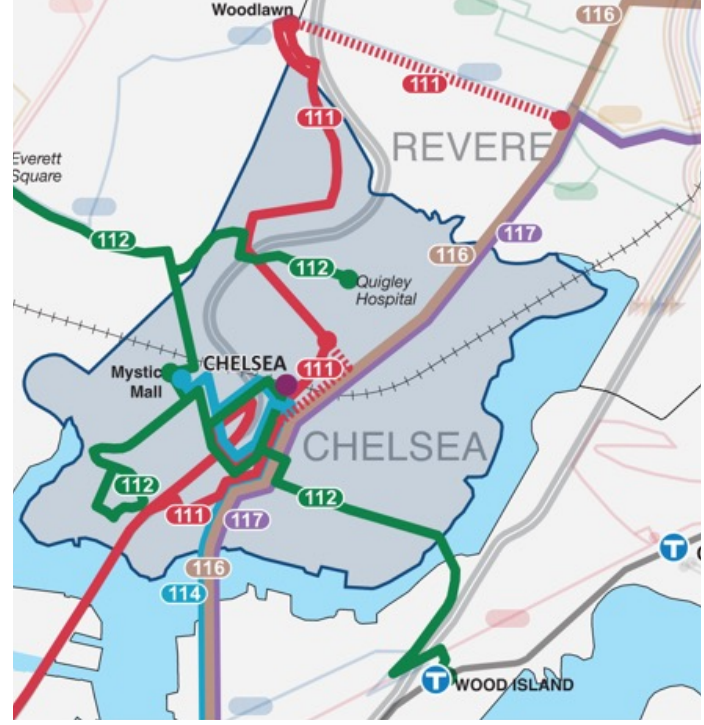


Figure 5. Chelsea MBTA Bus Routes

Source: Boston Region Metropolitan Planning Organization Interactive Application. (2017). 2015-2017 MBTA Systemwide Passenger Survey. Retrieved from <https://www.ctps.org/dv/mbtasurvey2018/index.html#navButton>

12K

In 2018, the 111 bus route had an average weekday ridership of more than 12,000 people.

Communication Barriers: Digital Divide and Language Diversity

Access to fast and reliable internet is imperative at a time where work, school, and other life tasks are all done from home. There are gaps in access to the internet across the state of Massachusetts. Chelsea’s download speed is almost “below average” at 35.56 megabits per second (Mbps).⁶⁶ The average download speed in Chelsea is close, but under, the threshold of what is considered acceptable by the federal government.⁶⁷ There is a digital divide, meaning on top of a poor connection, families might have slower or fewer devices to use and may face barriers to internet fluency. This may have created serious barriers to student learning during remote schooling (the full 20-21 academic year in Chelsea).

Language diversity is prominent in Chelsea. There are 31 different languages spoken in Chelsea Public Schools alone.⁶⁸ 69.8% of the population speaks a language other than English at home. 59.3% of the population speaks Spanish, 5.2% speak other Indo-European languages, 2.5% speak Asian and Pacific Islander languages, and 2.8% speak other languages.⁶⁹ Chelsea has the highest share of adults with Limited English Proficiency in the state at 33%.⁷⁰ Additionally, approximately 1,700 children aged 5 to 17 in Chelsea live in Limited English Proficient households.⁷¹



Sam

Chelsea is home. We may be small. We may be considered poor in the context of Massachusetts. But, we are rich in culture and community. It is so beautiful how our different cultures mix with each other. We may not speak the same languages, and our food might have different spices, but Chelsea mixes so beautifully. I know I can communicate with a neighbor across the street even if they don't speak English, because we all speak immigrant!

As of 2019, the top 6 languages most spoken in Chelsea are:⁷²

59.3% Spanish	1.4% African Languages
30.2% English	1.4% Vietnamese
2.3% Portuguese	1.3% Arabic

In addition, it is important to note that Chelsea is second in Massachusetts, behind Lawrence, with the most residents who primarily speak a foreign language at home.⁷³

Lack of technological knowledge, barriers to proper internet access, and language injustice are communications barriers that marginalize Chelsea's residents. Proper, multilingual communication is imperative, especially at a time when a novel virus is rapidly spreading through the country and new information is constantly being shared. Gaps in communication make it more challenging for residents to stay informed and connected to resources in an ever changing pandemic landscape.

Disclaimer: The Census and American Community Survey have shortcomings. This is due in large part because of the undercount of the Chelsea population. The numbers and data reported above are likely to be more dramatic if there was an accurate total population documented.

31

There are 31 different languages spoken in Chelsea Public Schools.

33%

Chelsea has the highest share of adults with Limited English Proficiency in the state at 33%.

References

1. The City of Chelsea. (n.d). About Our City. Retrieved from <https://www.chelseama.gov/about-our-city>
2. USA.com. (2021). Chelsea, MA. Retrieved from <http://www.usa.com/chelsea-ma.htm>
3. World Population Review. (2021). Chelsea, Massachusetts, Population 2021. Retrieved from <https://worldpopulationreview.com/us-cities/chelsea-ma-population>
4. United States Census Bureau. (2019). American Community Survey Demographics and Housing Estimates. Retrieved from <https://data.census.gov/cedsci/table?q=Chelsea%20city%20Race%20and%20Ethnicity&tid=ACSDP5Y2019.DP05>
- 5-6. United States Census Bureau. (2019). Selected Characteristics of the Native and Foreign Born Population. Retrieved from <https://data.census.gov/cedsci/table?q=Chelsea%20city,%20Massachusetts&tid=ACSST5Y2019.S0501>
7. United States Census Bureau. (2019). American Community Survey Demographics and Housing Estimates. Retrieved from <https://data.census.gov/cedsci/table?q=Chelsea%20city%20Race%20and%20Ethnicity&tid=ACSDP5Y2019.DP05>
8. The Boston Globe. (2020, June 24). Low Balling the Chelsea Population Threatens the State's Coronavirus Epicenter. Retrieved from <https://www.bostonglobe.com/2020/06/14/opinion/an-undercounted-population-threatens-chelsea-states-coronavirus-epicenter/>
- 9-10. United States Department of the Treasury. (2020). Coronavirus Relief Fund. Retrieved from <https://home.treasury.gov/policy-issues/coronavirus/assistance-for-state-local-and-tribal-governments/coronavirus-relief-fund>
11. The Commonwealth of Massachusetts. (2020, June 4). Baker-Polito Administration Announces \$109 Million in Direct Federal Aid for Four Communities. Retrieved from <https://www.mass.gov/news/baker-polito-administration-announces-109-million-in-direct-federal-aid-for-four-communities> & Boston Herald. (2021). Charlie Baker Says \$100 Million More in Coronavirus Relief Headed to "Shortchanged" Chelsea, Everett, Methuen, and Randolph. Retrieved from <https://www.bostonherald.com/2021/03/25/charlie-baker-says-100m-more-in-coronavirus-relief-headed-to-shortchanged-chelsea-everett-methuen-randolph/>
12. Chambers, L. (2020, April 7) Data Show COVID-19 Is Hitting Essential Workers and People of Color Hardest. The Data for Justice Project. American Civil Liberties Union (ACLU) of Massachusetts. Retrieved from https://data.aclum.org/2020/04/07/covid-19-disproportionately-affects-vulnerable-populations-in-boston/?ms_aff=MA&initms_aff=MA&ms_chan=tw&initms_chan=tw
13. Gov. Baker, C.D.. (2020, March 10). COVID-19 Order No. 13: Order Assuring Continued Operation of Essential Services in the Commonwealth, Closing Certain Workspaces, and Prohibiting Gathering of More than 10 People. The Commonwealth of Massachusetts, Office of the Governor. Retrieved from <https://www.mass.gov/doc/march-23-2020-essential-services-and-revised-gatherings-order/download>
14. Chambers, L. (2020, April 7) Data Show COVID-19 Is Hitting Essential Workers and People of Color Hardest. The Data for Justice Project. American Civil Liberties Union (ACLU) of Massachusetts. Retrieved from https://data.aclum.org/2020/04/07/covid-19-disproportionately-affects-vulnerable-populations-in-boston/?ms_aff=MA&initms_aff=MA&ms_chan=tw&initms_chan=tw
15. DeCosta-Kilpa, N. (2020, April 20). Why the city of Chelsea has been hit so hard by coronavirus. Boston.com. Retrieved from <https://www.boston.com/news/local-news/2020/04/10/chelsea-massachusetts-coronavirus/>
16. Gov. Baker, C.D.. (2020, March 10). COVID-19 Order No. 13: Order Assuring Continued Operation of Essential Services in the Commonwealth, Closing Certain Workspaces, and Prohibiting Gathering of More than 10 People. The Commonwealth of Massachusetts, Office of the Governor. Retrieved from <https://www.mass.gov/doc/march-23-2020-essential-services-and-revised-gatherings-order/download>
17. Mattos, T. & Schuster, L. (2020, April 13). A Profile of Frontline Workers in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/article-pages/2020/april/frontline_workers
18. Chambers, L. (2020, April 7) Data Show COVID-19 Is Hitting Essential Workers and People of Color Hardest. The Data for Justice Project. American Civil Liberties Union (ACLU) of Massachusetts. Retrieved from https://data.aclum.org/2020/04/07/covid-19-disproportionately-affects-vulnerable-populations-in-boston/?ms_aff=MA&initms_aff=MA&ms_chan=tw&initms_chan=tw
19. Mattos, T., Kamdar, B., Granberry, P., & Torres-Ardila, F. (2021, May 10). Latinx Population Hit Hard in the Covid-19 Recession: Mounting Hardships and One Big Idea for a Inclusive Recovery. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2021/april/latinx_impact
20. Economic Policy Institute. (2020, July). State Unemployment by Race and Ethnicity. Retrieved from <https://www.epi.org/indicators/state-unemployment-race-ethnicity/>
21. Mattos, T. & Schuster, L. (2020, April 13). A Profile of Frontline Workers in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/article-pages/2020/april/frontline_workers
- 22-23. Y-Charts. (2021). Chelsea, MA Unemployment Rates. Retrieved from https://ycharts.com/indicators/chelsea_ma_unemployment_rate & The Commonwealth of Massachusetts. (2021). Labor Market Information. Labor Force and Unemployment Data. Retrieved from <https://lmi.dua.eol.mass.gov/LMI/LaborForceAndUnemployment/LURResults?A=05&GA=000141&TF=2&Y=&Sopt=&Dopt=TEXT>

24. Data USA. (2019) Covid-19 in Numbers: Chelsea, MA. Retrieved from <https://datausa.io/profile/geo/chelsea-ma/#economy>
25. A Profile of Unemployed Workers in Massachusetts
26. Mattos, T., Kamdar, B., Granberry, P., & Torres-Ardila, F. (2021, May 10). Latinx Population Hit Hard in the Covid-19 Recession: Mounting Hardships and One Big Idea for a Inclusive Recovery. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2021/april/latinx_impact
27. Hammonds, C., Kerrissey, J., & Tomaskovic-Devey, D. (2020, June 5). Stressed, Unsafe, and insecure: Essential Workers Need a New New Deal. Center for Employment Equity, University of Massachusetts Amherst. Retrieved from <https://www.umass.edu/employmentequity/stressed-unsafe-and-insecure-essential-workers-need-new-new-deal#Insecure>
- 28-29. 2019: ACS 5-Year Estimates Data Profiles
30. United States Census Bureau. (2019). Quick Facts: Chelsea, MA. Retrieved from <https://www.census.gov/quickfacts/fact/table/chelseacitymassachusetts/IPE120219>
31. United States Census Bureau. (2019). Selected Characteristics of the Native and Foreign Born Population. Retrieved from <https://data.census.gov/cedsci/table?q=Chelsea%20city,%20Massachusetts&tid=ACSST5Y2019.S0501>
32. United States Census Bureau. (2019). Poverty Status in the Past 12 Months. Retrieved from <https://data.census.gov/cedsci/table?q=poverty&g=1600000US2513205&tid=ACSST5Y2019.S1701>
- 33-34. Data USA. (2019) Covid-19 in Numbers: Chelsea, MA. Retrieved from <https://datausa.io/profile/geo/chelsea-ma/#economy>
35. Melnik, M., & Raisz, A. (2020, December 18). Across Two Waves: COVID-19 Disparities in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities.
36. Chelsea Public Schools. (n.d.) Retrieved from <https://www.chelseaschools.com/>
37. 2020 District Report Card. (2020). Massachusetts Department of Elementary and Secondary Education. Retrieved from <https://reportcards.doe.mass.edu/2020/districtreportcard/00570000>
38. Schools and District Profiles. (n.d.). Chelsea, MA. Retrieved from <https://profiles.doe.mass.edu/general/generalspx?topNavID=1&leftNavId=100&orgcode=00570000&orgtypecode=5>
- 39-41. 2020 District Report Card. (2020). Massachusetts Department of Elementary and Secondary Education. Retrieved from <https://reportcards.doe.mass.edu/2020/districtreportcard/00570000>
- 42-43. MA Department of Elementary and Secondary Education (DESE)
44. United States Census Bureau. (2019). Quick Facts: Chelsea, MA. Retrieved from <https://www.census.gov/quickfacts/fact/table/chelseacitymassachusetts/IPE120219>
- 45-46. Noelke, C. & Sofer, N. (2021, April 25). Mapping Child Opportunity. Diversitydatakids.org. Retrieved from <https://www.diversitydatakids.org/research-library/blog/mapping-child-opportunity>
- 47-48. Child Opportunity Levels, Overall COI, metro-normed. Diversitydatakids.org. Retrieved from <https://www.diversitydatakids.org/maps/#/explorer/25017342500/15/10,15/ai,b,w,hi,ap/xc/m/1.0.14/42.402/-71.077/10.89/>
49. American Community Survey (ACS), 2014-2018, Table DP04
50. Daily Kos (2020, May 26). Post Pandemic, cities must reimagine public transit with safety, access, and racial justice in mind. Retrieved from <https://www.dailykos.com/stories/2020/5/26/1946527/-Post-pandemic-cities-must-reimagine-public-transit-with-safety-access-and-racial-justice-in-mind>
51. Swartz, S. (2020, September). Public Transit and Covid-19 Pandemic; Global Research and Best Practices. American Public Transportation Association. Retrieved from https://www.apta.com/wp-content/uploads/APTA_Covid_Best_Practices_09.29.2020.pdf
52. Buchanan, M., Fryer, L., McFarland, A., Ofsevit, A., Thompson, S. (2019, September). 64 Hours: Closing the Bus Equity Gap. Livable Streets: Connecting People and Places. Retrieved from <https://d3n8a8pro7vnmx.cloudfront.net/livablestreetsalliance/pages/6582/attachments/original/1569205099/lsa-better-buses-2019-v9-20sep19.pdf?1569205099>
53. American Community Survey (ACS), 2014-2018, Tables S0801
54. Boston Globe. Traffic, crowding, cancellations: This MBTA route shows all the T's . Retrieved from https://apps.bostonglobe.com/metro/graphics/2018/08/111-bus/?p1=Article_Inline_Text_Link
55. Vaccaro, A. (2018, April 6). These are the MBTA bus routes that had the most cancelled trips in 2016. Boston Globe. Retrieved from <https://www.bostonglobe.com/metro/2018/04/06/these-are-mbta-bus-routes-with-most-canceled-trips/ZEkw8PfBnZLkFvl4XCIPqK/story.html>
56. Matsueda, L., & Nyamekye, A. (2020, March 4). In transportation debate, don't forget low-income fares. Commonwealth Magazine. Retrieved from <https://commonwealthmagazine.org/opinion/in-transportation-debate-dont-forget-low-income-fares/>
57. Boston Globe. Traffic, crowding, cancellations: This MBTA route shows all the T's . Retrieved from https://apps.bostonglobe.com/metro/graphics/2018/08/111-bus/?p1=Article_Inline_Text_Link
58. Vaccaro, A. (2018, April 6). These are the MBTA bus routes that had the most cancelled trips in 2016. Boston Globe. Retrieved from <https://www.bostonglobe.com/metro/2018/04/06/these-are-mbta-bus-routes-with-most-canceled-trips/ZEkw8PfB>
59. Foster, G. Ito, K, Partridge, J., & Reardon, T. (2017, February). State of Equity in Metro-Boston. MAPC Regional Indicators. Retrieved from http://www.regionalindicators.org/topic_areas/7

- 60-61. Boston Region Metropolitan Planning Organization Interactive Application. (2017). 2015-2017 MBTA Systemwide Passenger Survey. Retrieved from <https://www.ctps.org/dv/mbtasurvey2018/index.html#navButton>
62. Buchanan, M., Fryer, L., McFarland, A., Ofsevit, A., Thompson, S. (2019, September). 64 Hours: Closing the Bus Equity Gap. Livable Streets: Connecting People and Places. Retrieved from <https://d3n8a8pro7vhm.cloudfront.net/livablestreetsalliance/pages/6582/attachments/original/1569205099/lisa-better-buses-2019-v9-20sep19.pdf?1569205099>
63. MilNiel, C. (2020, March 16). MBTA Will Reduce Service in Response to COVID-19. StreetsBlog Mass. Retrieved from <https://mass.streetsblog.org/2020/03/16/mbta-will-reduce-service-to-manage-covid-19-risks/>
64. Daily Kos (2020, May 26). Post Pandemic, cities must reimagine public transit with safety, access, and racial justice in mind. Retrieved from <https://www.dailykos.com/stories/2020/5/26/1946527/-Post-pandemic-cities-must-reimagine-public-transit-with-safety-access-and-racial-justice-in-mind>
65. MilNiel, C. (2020, April 27). Key MBTA Bus Route Ridership in the Covid-19 Pandemic. Observable. Retrieved from <https://observablehq.com/@vigorousnorth/key-mbta-bus-route-ridership-in-the-covid-19-pandemic>
- 66-67. Data Common. (2020, December). The Need for Speed: Boston. Retrieved from <https://datacommon.mapc.org/calendar/2020/december>
68. Chelsea Public Schools
69. United States Census Bureau. Geography Profile, Chelsea, MA. Retrieved from <https://data.census.gov/cedsci/profile?g=1600000US2513205>
- 70-71. The Boston Planning and Development Agency, Research Division (2019, February). Demographic Profile of Adult Limited English Speakers in Massachusetts. Retrieved from <http://www.bostonplans.org/getattachment/df1117a-af16-4257-b0f5-1d95dbd575fe>
72. Neighborhood Scout. (n.d.). Chelsea, MA Demographic Data. Retrieved from <https://www.neighborhoodscout.com/ma/chelsea/demographics>
73. Tempera, J. (2019, September 17). There are the Massachusetts cities and town where the most people speak a language other than English at home. MassLive. Retrieved from <https://www.masslive.com/news/erry-2018/08/50d91076058614/these-are-the-massachusetts-ci.html>

Immigrants and Immigration Policy



45%

Chelsea is the most immigrant-rich community in Massachusetts, with 45% of the population comprised of immigrants.

Chelsea immigrants' demographics and residents' immigration status affected COVID-19 infection and care-seeking rates. Chelsea has the highest percentage of foreign-born residents in Massachusetts. Chelsea also has the state's highest percentage of Limited English Proficient individuals, which seriously impacts the delivery of critical public health messaging. Immigration status often prevents individuals from seeking any form of assistance—including health care, testing and vaccinations during a pandemic; and immigration related trauma exacerbates this. Demographic trends indicate that immigrants have more “essential work” jobs, higher levels of poverty, and lower levels of education, each of which connects directly to increased COVID-19 infection, hospitalization, and death rates.

1.2M

In 2018, MA had 1,198,148 foreign-born residents, nearly double what it was 1990.



69.8%

69.8% of Chelsea residents are speakers of a non-English language, which is substantially higher than the national average of 21%.

Immigrant Population in the U.S. and Massachusetts

The demographic composition of the immigrant population changes over time. Immigration policy changes play a significant role in the demographics of the immigrant population in the United States at any given time. The Trump Administration focused heavily on reducing immigration to the United States. That Administration’s policies, coupled with the COVID-19 pandemic, drastically brought migration and travel to a halt in the U.S. as well as worldwide. These circumstances, along with events prior to 2020, have caused a shift in the immigrant population in the U.S., including the origin of recent arrivals and the decline of undocumented immigration.¹

A report from the Migration Policy Institute suggests that more than 44.9 million immigrants lived in the United States in 2019, and that this immigrant population comprised 13.7% of the total U.S. population.² In the past 50 years there has been a shift in the origin countries of immigrants. In the mid-1900’s the immigrant population was largely European. Large-scale immigration from Latin America and Asia occurred in the late 20th and early 21st century, transforming the composition of the current immigrant population.³ Since 2000, in the United States, the percentage of Mexican immigrants has declined, whereas the number of immigrants from India, China, Vietnam, the Dominican Republic, the Philippines, Cuba, Venezuela, Guatemala, and El Salvador has increased between 2010 and 2019.⁴

The Census Bureau has determined the racial categories: White, Black, Asian, American Indian, or Pacific Islander based on the social definition of race.⁵ Additionally, the Census Bureau determines ethnicity based on whether a person does or does not have Hispanic or Latinx origins.⁶ In the United States in 2019, 45% of immigrants reported their race as single-race White, 27% as Asian, 10% as Black, and 15% as some other race. About 2% reported having two or more races.⁷ Of the total U.S. immigrants, 44% reported having Hispanic or Latinx origins. A majority of the U.S. Latinx population is U.S. born. In 2019, of the 60.5 million people who self-identified as Hispanic or Latinx, 33% were immigrants and 67% were U.S.-born.⁸

In Massachusetts, since 1990, the number of people residing in the state who were not U.S. citizens at birth (also known as foreign-born) has nearly doubled to 1,198,148 individuals in 2018.⁹ Of the total immigrant population in Massachusetts, 42.4% identified as White, 15.7% identified as Black, and 26.6% identified as Asian. Of the total population, 23.1% reported having Hispanic or Latinx origins.¹⁰ The place of birth for immigrants in Massachusetts varies. Of this immigrant population



Carmen

The people who don’t have any documentation. We are forgotten. We are forgotten. The state and federal government, they haven’t given us anything and we ARE a part of this society. I feel like now Chelsea is my second home. We are part of this society. But we are not recognized here in society.

38.3% are born in Latin America, 30.4% are born in Asia, 19.5% are born in Europe, 8.7% are born in Africa, and 2% are born in Northern America.¹¹ Chelsea is the most immigrant-rich community in Massachusetts, with 45% of the population comprised of immigrants.¹²

In the United States, the majority of children in immigrant families were U.S. born- 88% in 2019.¹³ Since 1990, the number of children nationally with at least one immigrant parent has nearly doubled.¹⁴ In Massachusetts, the number of children with at least one immigrant parent has increased to 399,000 in the last three decades.¹⁵ In Suffolk County alone, 48% of the entire population are first or second generation immigrants.¹⁶ In 2019 of the approximately 400,000 children, 84.2% were born in the United States.¹⁷ These mixed-status families (with family members that are both immigrants and U.S.-born) often encounter challenges related to their differing status.

Immigrant Population Demographics

Demographic indicators such as languages spoken, education, employment, income and trauma are examples of social determinants that can influence health outcomes. Among the immigrant population in Massachusetts aged 5 and older, 41.9% speak English less than “very well.” Of this same group, 19.6% speak only English.¹⁸ In Massachusetts, approximately 615,909 individuals speak Spanish; 42.5% of this population speak English less than “very well.”¹⁹ French, Haitian, Portuguese, Chinese, Vietnamese, and Arabic are also widely spoken across Massachusetts.²⁰ According to the American Community Survey, 93.8% of Chelsea’s foreign born population are speakers of a non-English language. 69.8% of Chelsea residents are speakers of a non-English language, which is substantially higher than the national average of 21%.²¹ In 2019, the most common non-English language spoken in Chelsea was Spanish. Of the overall Chelsea population, 53.7% are native Spanish speakers.²²

In Massachusetts in 2018, 46.2% of the immigrant population aged 25 and older had attained less than a high school diploma.²³ Almost 19% of this population had a Bachelor’s degree or higher.²⁴ Of the foreign-born MA population, aged 16 or older, 68.3% are in the civilian labor force.²⁵ The foreign-born population in Massachusetts is concentrated in the construction, manufacturing, food services, waste-management services, health care and social assistance, and transportation and warehousing industries.²⁶ The top three occupational categories for the foreign-born population includes: service occupations; production, transportation, and material moving occupations; and natural resources, construction, and maintenance occupation.²⁷ *[See Demographics and COVID-19 for more information.]*

The income and poverty status of the foreign-born population in Massachusetts varies slightly from national numbers. Poverty status is determined for 1,169,856 foreign-born individuals. Of this immigrant population, 27.6% live at or below 200% of the poverty level.²⁸ Of families with females at the head of the household with no spouse present, 22.9% live in poverty compared to the 6.3% of married-couple families.²⁹ The median household income for the foreign-born population is \$70,660 compared to \$81,557 median household income for U.S.-born individuals. Lastly looking at homeownership and health coverage, only 48.8% of foreign-born individuals own their homes.³⁰ The majority of foreign-born civilians in MA have health insurance (94.2%); of those 40.4% have public coverage and 62.6% have private insurance.³¹

Increased unemployment and financial concerns have contributed to the high levels of stress, anxiety, and fear many may experience throughout this pandemic. For the immigrant community, battling these challenges is especially difficult. For immigrant survivors of gender-based violence, the COVID-19 pandemic has contributed to increased violence, isolation, and the inability to escape

The foreign-born population in Massachusetts is concentrated in the construction, manufacturing, food services, waste-management services, health care and social assistance, and transportation and warehousing industries.

27.6%

Of the immigrant population in Massachusetts, 27.6% live at or below 200% of the poverty level.

“The demonization of immigrants, perfected, but by no means invented, by President Trump, was the prelude to the pandemic, justification for the conditions where the disease could thrive: segregation, overcrowding, miserable wages, unemployment, hunger, and, always, fear of authority, discovery, deportation. People do not line up for food—in masks—when there is any other choice.”⁴⁷

- Martín Espada, Opinion Piece from the Boston Globe

17,069

5,450

17,069 individuals held TPS status and 5,450 are active DACA recipients in Massachusetts.



violent situations.^{32,33} For immigrants and refugees battling mental health, the pandemic may have hindered seeking help due to fear, the inability to navigate the healthcare system, and language barriers.³⁴ These factors should be considered when thinking about immigrant communities’ vulnerability to major health crises.

Immigration Policies that Impact Chelsea Residents

Policy has a direct impact on people’s health. For vulnerable populations, like immigrant communities in the United States, immigration policies can influence their health, well-being and survival.

Temporary Protected Status (TPS)

Since 1990, Temporary Protected Status (TPS) has been granted to nationals of certain countries that are experiencing violent conflict or have suffered a natural disaster.³⁵ TPS is seen as a form of humanitarian relief. TPS does not grant permanent legal status in the United States, nor are individuals with TPS status eligible to apply for U.S. Citizenship.³⁶ Currently ten countries are designated for TPS: El Salvador, Haiti, Honduras, Nepal, Nicaragua, Somalia, South Sudan, Sudan, Syria, and Yemen.³⁷ Accurate numbers for those with TPS may be hard to pinpoint due to the transience of the immigrant community. However, in 2020, an estimated 319,000 people in the U.S. held TPS.³⁸ Salvadorans (195,000), Hondurans (57,000), and Haitians (46,000) are the largest groups with active status.³⁹ In Massachusetts, 17,069 individuals held TPS status as of November 2019.⁴⁰ The former administration attempted to halt the extension of TPS for a few select countries, but failed, with TPS protections being extended until October 2021.⁴¹ Though the attempt to revoke TPS failed, the threat alone sparked fear among immigrant communities.

Deferred Action for Childhood Arrivals (DACA)

The Deferred Action for Childhood Arrivals (DACA) program, which went into effect in 2012, is a two-year grant of deportation relief and work authorization to eligible young unauthorized immigrants.⁴² DACA recipients were brought into the country before the age of 16 by immigrant parents.⁴³ DACA status offers safety from the threat of deportation, the ability to work, and the opportunity to build a life in the U.S. Similar to TPS, the former administration attempted to terminate DACA, but in 2020 the U.S. Supreme Court ruled the rescission violated federal law.⁴⁴ Mexico (78 percent), El Salvador (4 percent), Guatemala (3 percent), Honduras (2 percent), and South Korea (1 percent) are the top five countries of origin of accepted DACA applicants.⁴⁵ The Migration Policy Institute estimates 15,000 Massachusetts residents are immediately eligible for DACA but approximately only one third of this population (5,450) are active DACA recipients.⁴⁶

Public Charge Rule

Federal Guidance was issued in 1999, outlining the use of “public charge” to deny green card applicants based on their usage of public assistance programs; however, applicants could have a sponsor sign an Affidavit of Support and avoid the Public Charge ruling.⁴⁸ During the Trump Presidency, on October 10, 2018, the U.S. Department of Homeland Security (DHS) published a proposed public charge rule change.⁴⁹ Under this rule many immigrants could be prevented from obtaining lawful permanent residence or renewing a temporary visa if they are using or have used certain benefits, or if immigration officers determine they are likely to use these benefits in the future.⁵⁰ The proposed rule expanded existing guidance to include public benefits such as federally-funded Medicaid, Supplemental Nutrition Assistance Program (SNAP), and Section 8 housing assistance to name a few.⁵¹ It also allowed for the examination of potential future use of assistance programs.

The new public charge ruling went into effect on February 24, 2020, just days before the COVID-19 pandemic ravaged low income communities of color.⁵² Along with the public benefits listed above, benefits under the new rule were defined to include: cash assistance for income maintenance, Supplemental Security Income (SSI), state and local cash assistance programs, and Temporary Assistance for Needy Families (TANF).⁵³ Multiple factors including, household income, employment, English-speaking ability, health conditions, among others, were newly considered to determine if a person is likely to become a public charge.⁵⁴ An immigration officer must examine all life circumstances and is not supposed to rely on a single factor when evaluating the future likelihood of a person becoming dependent on the government.⁵⁵ Not all public benefits trigger a public charge concern including Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), National School Lunch and Breakfast Program, education assistance, community-based programs and services, among others.⁵⁶

When the public charge rule was proposed in 2018, researchers outlined the implications and impact, specifically looking at the overall negative health impact. The Kaiser Family Foundation (KFF), outlined the implications for health and health coverage. These include disenrollment in public benefits, reduced access to care, negative health outcomes, and a financial impact on federal and state programs.⁵⁷ The public charge rule not only creates barriers to getting a green card or immigrating to the U.S. but is likely to reduce immigrant families’ and their U.S.-born children’s (mixed-status household) participation in programs like Medicaid and SNAP.⁵⁸ “Nationwide, 13.5 million Medicaid/CHIP enrollees, including 7.6 million children, live in a household with a noncitizen or are noncitizens themselves and may be at risk for decreased enrollment as a result of the rule.”⁵⁹ DHS has recognized the potential harmful impact of the rule. They state that the

The Kaiser Family Foundation, outlined the implications of the Public Charge ruling for health and health coverage. These include disenrollment in public benefits, reduced access to care, negative health outcomes, and a financial impact on federal and state programs.

55K–129K
27K–63K

The Blue Cross Blue Shield of Massachusetts Foundation estimates 55,000–129,000 Massachusetts residents will disenroll from or forgo enrolling in MassHealth as a result of the new public charge ruling. It estimates 27,000–63,000 Massachusetts residents will be in households that disenroll from SNAP.



U.S. DEPARTMENT OF HOMELAND SECURITY: POTENTIAL IMPACTS OF PUBLIC CHARGE

Obesity

Malnutrition

Increased use of
emergency care

Increased prevalence of
communicable diseases

Increased rates of poverty
and housing instability

rule may lead to increased prevalence of obesity and malnutrition, increased use of emergency care, increased prevalence of communicable diseases, and increased rates of poverty and housing instability.⁶⁰ DHS has claimed that the aim of the public charge rule is to ensure “self-sufficiency” among immigrants.⁶¹ This goal is unrealistic especially when facing social and environmental factors outside of our control- for example a worldwide pandemic.⁶²

The COVID-19 public health and economic crisis Chelsea is currently facing is likely to exacerbate the impact of the public charge.⁶³ In September 2020, the Blue Cross Blue Shield of Massachusetts (BCBSMA) Foundation released a report, including pre-COVID-19 analysis and quantitative estimates, outlining the impact of the final public charge rule on the state. These estimated primary impacts of the public charge- healthcare coverage and access to food- are likely to be magnified due to the dual crises we are currently facing.⁶⁴ These estimates of enrollment in public benefits don’t consider how the economic downturn (which would drive enrollment up) and the public charge (which would drive enrollment down) will interact with one another.⁶⁵

The impacts of the public charge rule can be divided into three categories. The first is the impact on the population that is directly affected. This encompasses those applying for a green card or visas through a pathway where public charge is relevant.⁶⁶ The second category of people are those who may experience a chilling effect. This is the population of people who may experience fear or confusion about whether they qualify to apply for public benefits, including mixed-status families.⁶⁷ Those most likely to feel the greatest impact are underserved groups such as children, seniors, people with disabilities, and pregnant people.⁶⁸ The final impact is the actual disenrollment from programs. Of those who experience a chilling effect, a portion of that population will go forward with disenrolling from benefits, even those they may qualify for.⁶⁹ The Fiscal Policy Institute and the Children’s Partnership estimated the chilling effect of the public charge rule on Medicaid and SNAP enrollment to be in the 15–35 percent range.⁷⁰

Based on the estimates provided by the Fiscal Policy Institute and the Children’s Partnership, BCBSMA Foundation estimated the impact of the public charge rule on public benefit use in Massachusetts. MassHealth, which comprises Medicaid and Children’s Health Insurance Programs (CHIP) provides free or low-cost health care to low-income individuals, including pregnant people, children, the elderly, and those with disabilities.⁷¹ Enrollment in MassHealth is linked to increased financial stability, increased physical and mental health, and decreased mortality.⁷² The BCBSMA Foundation estimates 55,000-129,000 Massachusetts residents will disenroll from or forgo enrolling in MassHealth as a result of the new public charge ruling.⁷³ Having access to healthcare is imperative for one’s general health and well-being. During a global health crisis, where the likelihood of getting sick is much higher, access to healthcare is a necessity.

Another widely used public benefit, SNAP, is also likely to be impacted by the public charge rule. SNAP is a federally funded and state-administered program that addresses hunger by supplementing the food budgets of low-income people.⁷⁴ The BCBSMA Foundation estimates 27,000-63,000 Massachusetts residents will be in households that disenroll from SNAP or forgo benefits as a result of the new public charge ruling.⁷⁵ In 2013, the United States Department of Agriculture released a study which found that enrollment and participation in SNAP to be associated with an improvement in food security.⁷⁶ In Massachusetts, food insecurity is a significant problem. The inability to access healthy food can contribute to a myriad of health problems, even those that make you more susceptible to COVID-19 such as diabetes and obesity. *[See Food: Access and Insecurity for more information.]*

The chilling effect created by the public charge contributes to worsened health outcomes in immigrant communities as well. Aside from disenrollment in public health benefits, healthcare providers have reported individuals are not accessing the care they need. In 2019, the Kaiser Family Foundation issued a report stating that of the health centers they surveyed, approximately 28% reported declines among adult immigrant patients seeking care in the past year.⁷⁷ Reduction in care utilization is occurring in all areas that are essential for maintaining health including prenatal and diabetes care.⁷⁸ In Massachusetts, health centers and the Massachusetts Department of Public Health have reported a decline in basic health screenings for nutrition services and cancer.⁷⁹

In the context of COVID-19, the U.S. Citizen and Immigration Services (USCIS) stated that testing, treatment, and preventative care (i.e. COVID-19 vaccine) will not negatively affect any immigrant's public charge determination.⁸⁰ However, the fear and confusion generated by the public charge rule is far-reaching and most likely played a role in the rapid spread of COVID-19 in immigrant communities like Chelsea, even though USCIS released official statements addressing the fear and confusion.

Along with the public charge rule, the fear generated by the former administration's immigration reduction actions, such as ICE raids, should not be underestimated when it comes to understanding the state of the pandemic in Chelsea.⁸² Rapidly changing immigration policies, lack of healthcare coverage and the prevalence of food insecurity during the pandemic leaves residents especially vulnerable to the impacts of COVID-19.⁸³

As of March 9, 2021, USCIS released a statement stating that the August 2019 Public Charge Final Rule will no longer apply. USCIS will not be considering an applicant's receipt of Medicaid (except for long-term institutionalization at the government's expense), public housing, or SNAP benefits as part of the public charge inadmissibility determination.⁸⁴ However, the fear and confusion related to Public Charge, likely still remains.



'[...] But the agency [USCIS] stopped short of putting the rule on hold; instead, it's giving immigrants an opportunity to prove to authorities that the health care they use is directly related to the pandemic before they are deemed a public charge. "If you go to the hospital and it turns out you're [COVID-19] negative, and actually what you have is some other ailment, you're screwed," Wendy Parmet, a law professor at Northeastern, told me. At a hearing last week for a legal challenge to the public-charge rule, a federal judge put it this way: "Basically, the rule right now is: If I'm dying from coronavirus, it's not used against me, but if I'm dying of cancer, it is used against me.'"⁸¹

- Jeremy Raff, The Atlantic

28%

In 2019, the Kaiser Family Foundation issued a report stating that of the health centers they surveyed, approximately 28% reported declines among adult immigrant patients seeking care in the past year.

Chelsea adopted its sanctuary city resolution in 2007 to ensure all residents are treated with dignity and respect, regardless of their immigration status.

Chelsea's Sanctuary City Status

The sanctuary city movement started in the early 1980's when activists began offering assistance to Central American refugees fleeing civil wars and mass violence in El Salvador and Guatemala.⁸⁵ Though the sanctuary city movement has been around for more than thirty years, in order to fight Trump's anti-immigration policies, there was a push to establish more sanctuary cities across the nation.⁸⁶ Sanctuary cities, though not a legal term, generally refers to when a state, county, and city limits cooperation with Immigration and Customs Enforcement (ICE) in order to protect low-priority cases from deportation.⁸⁷ Some cities who claim sanctuary status do cooperate with ICE when it comes to immigrants who have committed serious crimes.⁸⁸

As Central Americans began to settle in the Greater Boston area, cities such as Cambridge, Somerville, and Chelsea claimed sanctuary city status over the last decade.⁸⁹ Chelsea adopted its sanctuary city resolution in 2007 to ensure all residents are treated with dignity and respect, regardless of their immigration status.⁹⁰ Those who were involved in this effort, including GreenRoots leadership, city officials and community partners shared values that all persons regardless of their immigration status, should feel welcome, safe and part of the community at large.⁹¹ Lastly, when President Trump attempted to punish communities like Chelsea for adopting this approach to public safety, the city joined with others to seek a declaration from the Federal Court that the Executive Order Trump had signed was unconstitutional.⁹²

Policy Recommendations

1. **Clear, multilingual guidance must be shared in multiple forums about the current administration's changes to the Public Charge Rule and how immigrants can and cannot be impacted by utilizing public benefits. Extensive immigrants' rights workshops and trainings must be prioritized and expanded.**
2. **Protections and support for mixed-status families (with undocumented family members) must be enacted.**
3. **Massachusetts should follow the City of Chelsea's example and become a "Safe Community."**
4. **Eliminate cooperation between U.S. Immigration and Customs Enforcement (ICE) and police for any non-criminal actions.**
5. **Enact legislation that prioritizes immigrant safety and participation in civic life (including but not limited to: a path to citizenship; local voting rights; driver licenses for non-citizens; state ID program for all residents; formalizing day labor sites; ensuring protections for undocumented workers; and in-state tuition for undocumented youth).**

References

- 1-4. Batalova, J., Hanna, M., & Levesque, C. (2021, February 11). Frequently Requested Statistics on Immigrants and Immigration in the United States. Migration Policy Institute. Retrieved from <https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states-2020#immigrant-destinations>
- 5-6. United States Census Bureau. (2020, October 16). About Race. Retrieved from <https://www.census.gov/topics/population/race/about.html>
- 7-8. Batalova, J., Hanna, M., & Levesque, C. (2021, February 11). Frequently Requested Statistics on Immigrants and Immigration in the United States. Migration Policy Institute. Retrieved from <https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states-2020#immigrant-destinations>
- 9-11. Migration Policy Institute. (n.d.). State Immigration Profiles: Massachusetts - Demographics and Social. Retrieved from <https://www.migrationpolicy.org/data/state-profiles/state/demographics/MA>
12. MIRA Coalition. (2021, January). Immigrants in our Commonwealth. Retrieved from <https://www.miracoalition.org/wp-content/uploads/2021/01/Immigrants-are-our-commonwealth.pdf>
- 13-15. Migration Policy Institute. (n.d.). Children in U.S. Immigrant Families. Retrieved from <https://www.migrationpolicy.org/programs/data-hub/charts/children-immigrant-families?width=1000&height=850&iframe=true>
16. Mattos, T. (2019, October 30). Second Generation Immigrants in Massachusetts Have Among the Highest Incomes in the Country. Boston Indicators. Retrieved from https://www.bostonindicators.org/article-pages/2019/october/immigrant_generational_differences
17. Migration Policy Institute. (n.d.). Children in U.S. Immigrant Families. Retrieved from <https://www.migrationpolicy.org/programs/data-hub/charts/children-immigrant-families?width=1000&height=850&iframe=true>
- 18-20. Migration Policy Institute. (n.d.). State Immigration Profiles: Massachusetts - Language and Education. Retrieved from <https://www.migrationpolicy.org/data/state-profiles/state/demographics/MA>
- 21-22. United States Census Bureau (2019). Chelsea city - Language Spoken at Home, 2019 American Community Survey 5-Year Estimates. Retrieved from <https://data.census.gov/cedsci/profile?g=1600000US2513205>
- 23-24. Migration Policy Institute. (n.d.). State Immigration Profiles: Massachusetts - Language and Education. Retrieved from <https://www.migrationpolicy.org/data/state-profiles/state/demographics/MA>
- 25-27. Migration Policy Institute. (n.d.). State Immigration Profiles: Massachusetts - Workforce. Retrieved from <https://www.migrationpolicy.org/data/state-profiles/state/demographics/MA>
- 28-31. Migration Policy Institute. (n.d.). State Immigration Profiles: Massachusetts - Income and Poverty. Retrieved from <https://www.migrationpolicy.org/data/state-profiles/state/demographics/MA>
32. Tahiri Justice Center. (2020, March 23). Analysis : The Impact of COVID-19 on Immigrant Survivors. Retrieved from <https://www.tahiri.org/news/analysis-the-impact-of-covid-19-on-immigrant-survivors/>
- 33-34. Andermann, L., Law, S., & Steffen, W. (2020, June 23). Immigrant and Refugee Mental Health During the COVID-19 Pandemic: Additional Key Considerations. The Office of the College of Family Physicians of Canada. Retrieved from <https://www.cfp.ca/news/2020/06/23/06-23-1>
- 35-36. Bergeron, C., & Messick, M. (2014, July 2). Temporary Protected Status in the United States: A Grant of Humanitarian Relief that is Less Than Permanent. Migration Policy Institute. Retrieved from <https://www.migrationpolicy.org/article/temporary-protected-status-united-states-grant-humanitarian-relief-less-permanent>
- 37-39. Batalova, J., Hanna, M., & Levesque, C. (2021, February 11). Frequently Requested Statistics on Immigrants and Immigration in the United States. Migration Policy Institute. Retrieved from <https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states-2020#immigrant-destinations>
40. Wilson, J. H. (2021, May 28). Temporary Protected Status and Deferred Enforcement Departure. Congressional Research Service. Retrieved from <https://fas.org/sgp/crs/homsec/RS20844.pdf>
- 41-45. Batalova, J., Hanna, M., & Levesque, C. (2021, February 11). Frequently Requested Statistics on Immigrants and Immigration in the United States. Migration Policy Institute. Retrieved from <https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states-2020#immigrant-destinations>
46. Migration Policy Institute. (n.d.) Deferred Action for Childhood Arrivals (DACA) Data Tools. Retrieved from <https://www.migrationpolicy.org/programs/data-hub/deferred-action-childhood-arrivals-daca-profiles>
47. Espada, M. (2020, July 2). Chelsea then and now. Boston Globe. Retrieved from <https://www.bostonglobe.com/2020/07/02/opinion/chelsea-then-now/>
48. United States Citizenship and Immigration Services. (2019). Public Charge Provisions of Immigration Law: A Brief Historical Background. Retrieved from <https://www.uscis.gov/about-us/our-history/history-office-and-library/featured-stories-from-the-uscis-history-office-and-library/public-charge-provisions-of-immigration-law-a-brief-historical-background>

- 49-50. Capps, R., Greenberg, M., Fix, M., Zong, J. (2018, November). Gauging the Impact of DHS's Proposed Public-Charge Rule on U.S. Immigration: Policy Brief. Migration Policy Institute. Retrieved from https://www.migrationpolicy.org/sites/default/files/publications/MPI-PublicChargeImmigrationImpact_FinalWeb.pdf
- 51-56. Kinoshita, S., & Quinn, E. (2020, March). An Overview of Public Charge and Benefits. Immigrant Legal Resource Center. Retrieved from https://www.ilrc.org/sites/default/files/resources/overview_of_public_charge_and_benefits-march2020-v3.pdf
- 57-59. Kaiser Family Foundation (2019, August 12). Changes to "Public Charge" Inadmissibility Rule: Implications for Health and Health Coverage. Retrieved from <https://www.kff.org/racial-equity-and-health-policy/fact-sheet/public-charge-policies-for-immigrants-implications-for-health-coverage/>
- 60-61. Homeland Security Department (2019, August 18). Inadmissibility on Public Charge Grounds. Federal Register. Retrieved from <https://www.federalregister.gov/documents/2019/08/14/2019-17142/inadmissibility-on-public-charge-grounds>
62. Parmet, W. E., (2018, September 27). The Health Impact of the Proposed Public Charge Rules. Health Affairs. Retrieved from <https://www.healthaffairs.org/doi/10.1377/hblog20180927.100295/full/>
- 63-65. Love, K, Gershon, R., & Sullivan, M. (2020, September). The Final Public Charge Admissibility Rule: Implications for Massachusetts. Boston, MA: BCBSMA Foundation. Retrieved from <https://www.bluecrossmafoundation.org/publication/final-public-charge-admissibility-rule-implications-massachusetts>.
- 66-67. Fiscal Policy Institute. (2018, October 10). Only Wealth Immigrants Need Apply: How Trump Rule's Chilling Effect Will Harm the U.S.. Retrieved from <http://fiscalspolicy.org/wp-content/uploads/2018/10/US-Impact-of-Public-Charge.pdf>
68. Love, K, Gershon, R., & Sullivan, M. (2020, September). The Final Public Charge Admissibility Rule: Implications for Massachusetts. Boston, MA: BCBSMA Foundation. Retrieved from <https://www.bluecrossmafoundation.org/publication/final-public-charge-admissibility-rule-implications-massachusetts>.
- 69-70. Fiscal Policy Institute. (2018, October 10). Only Wealth Immigrants Need Apply: How Trump Rule's Chilling Effect Will Harm the U.S.. Retrieved from <http://fiscalspolicy.org/wp-content/uploads/2018/10/US-Impact-of-Public-Charge.pdf>
- 71-75. Love, K, Gershon, R., & Sullivan, M. (2020, September). The Final Public Charge Admissibility Rule: Implications for Massachusetts. Boston, MA: BCBSMA Foundation. Retrieved from <https://www.bluecrossmafoundation.org/publication/final-public-charge-admissibility-rule-implications-massachusetts>.
76. Dragoset, L., Mabli, J., & Olhs, J. (2013, August 30). Measuring the Effects of Supplemental Nutrition Assistance Program Participation on Food Security. U.S. Department of Agriculture, Food and Nutrition Service. Retrieved from <https://mathematica.org/publications/measuring-the-effect-of-supplemental-nutrition-assistance-program-snap-participation-on-food-security>
- 77-78. Artiga, S., Pham, O., & Tolbert, J. (2019, October). Impact of Shifting Immigration Policy on Medicaid Enrollment and Utilization of Care among Health Care Patients. Kaiser Family Foundation. Retrieved from <https://files.kff.org/attachment/Issue-Brief-Impact-of-Shifting-Immigration-Policy-on-Medicaid-Enrollment-and-Utilization-of-Care-among-Health-Center-Patients>
79. Love, K, Gershon, R., & Sullivan, M. (2020, September). The Final Public Charge Admissibility Rule: Implications for Massachusetts. Boston, MA: BCBSMA Foundation. Retrieved from <https://www.bluecrossmafoundation.org/publication/final-public-charge-admissibility-rule-implications-massachusetts>.
80. United States Citizenship and Immigration Services. (2019). Public Charge Provisions of Immigration Law: A Brief Historical Background. Retrieved from <https://www.uscis.gov/about-us/our-history/history-office-and-library/featured-stories-from-the-uscis-history-office-and-library/public-charge-provisions-of-immigration-law-a-brief-historical-background>
- 81-82. Raff, J. (2020, May 29). How Fears Spread the Coronavirus. The Atlantic. Retrieved from <https://www.theatlantic.com/politics/archive/2020/05/immigrants-sick-covid-19-are-scared-seek-help/612142/>
83. Love, K, Gershon, R., & Sullivan, M. (2020, September). The Final Public Charge Admissibility Rule: Implications for Massachusetts. Boston, MA: BCBSMA Foundation. Retrieved from <https://www.bluecrossmafoundation.org/publication/final-public-charge-admissibility-rule-implications-massachusetts>.
84. United States Citizenship and Immigration Services. (2019). Public Charge Provisions of Immigration Law: A Brief Historical Background. Retrieved from <https://www.uscis.gov/about-us/our-history/history-office-and-library/featured-stories-from-the-uscis-history-office-and-library/public-charge-provisions-of-immigration-law-a-brief-historical-background>
- 85-86. Global Boston. (n.d.). Sanctuary Cities: Past and Present. Boston College, Department of History. Retrieved from <https://globalboston.bc.edu/index.php/home/eras-of-migration/fourth-page-test/sanctuary-cities/>
- 87-88. MIRA Missouri. (n.d.). Sanctuary Cities. Retrieved from <https://www.mira-mo.org/sanctuary>
89. Global Boston. (n.d.). Sanctuary Cities: Past and Present. Boston College, Department of History. Retrieved from <https://globalboston.bc.edu/index.php/home/eras-of-migration/fourth-page-test/sanctuary-cities/>
- 90-92. Ambrosino, T. (2017, April 20). Chelsea 2017: State of the City. The City of Chelsea. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/final_booklet_state_of_the_city_2017.pdf

#3

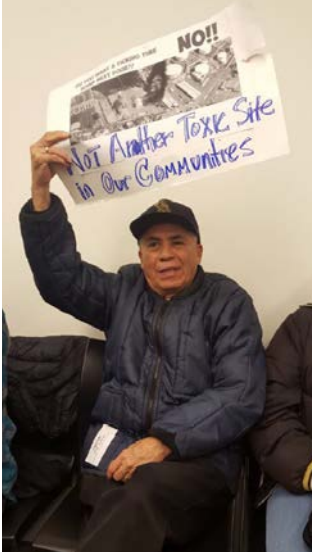
Chelsea ranks third in Massachusetts as the most intensively overburdened community for potential hazardous exposures due to the high density of environmentally hazardous industrial facilities and sites.

Low-income communities and communities of color feel the burden of environmental pollution far more greatly compared to White, wealthy communities.

The City of Chelsea is home to a myriad of hazardous industries, has a high volume of vehicular, airplane, and ship traffic, in addition to numerous construction sites all of which are contributors to poor air quality. Breathing air contaminated with various pollutants can lead to respiratory and cardiovascular ailments such as asthma and heart disease, as well as many types of cancer. Poor air quality along with these comorbidities worsen COVID-19 symptoms as well as increase the risk of death. Chelsea's poor air quality and high rates of respiratory and cardiovascular disease left residents extremely vulnerable to COVID-19.

"We need to take a longer, harder look at environmental racism—systems that produce and perpetuate inequalities in exposure to environmental pollutants. [...] The main culprits include indifference and ignorance, inadequate testing of industrial chemicals, racism, housing discrimination. [...] To combat these, society must actively take responsibility. By anticipating the outsized environmental assaults that people of colour face, we can act to protect lives during the current pandemic and future outbreaks."

- Harriet A. Washington, Author of *A Terrible Thing To Waste: Environmental Racism And Its Assault On The American Mind*



THE CITY OF CHELSEA'S INDUSTRIAL BURDENS:

63K

63,000 cars travel on the Tobin Bridge daily.

37K

37,000 produce-delivery trucks travel through Chelsea annually.

100%

80%

70%

The Chelsea Creek is home to fuel storage terminals, which supply the airport with 100% of its jet fuel, and provides the region with 80% of its home heating fuel and more than 70% of its gasoline and diesel fuel.

Low-income communities and communities of color bear the brunt of a myriad of injustices related but not limited to health, housing, and the environment. Environmental health and justice are important pieces of the puzzle when it comes to understanding Chelsea's vulnerability to the COVID-19 pandemic. The City of Chelsea, a transportation hub, is located under major flight paths for Boston Logan International Airport; is home to the Tobin Bridge, connecting the North Shore to Boston through major highways, carrying 63,000 cars daily; and the New England Produce Center, which sees approximately 37,000 trucks annually. The Produce Center delivers produce to 8 million people living on the Eastern seaboard, including some Canadian provinces.^{2,3,4} Additionally, the Chelsea Creek is home to fuel storage terminals, which supply the airport with 100% of its jet fuel, and provides the region with 80% of its home heating fuel and more than 70% of its gasoline and diesel fuel.^{5,6} Finally, the Chelsea waterfront houses salt piles, which serve over 200 public safety agencies in Massachusetts with road salt during the winter months, and airport related industries with high volumes of vehicles.⁷ These industries are situated along the Chelsea Creek, a designated port area; a steady stream of trucks and ships spewing emissions into the air is not uncommon.⁸ All these factors contribute to poor air quality and health disparities in an already vulnerable community.

The United States Environmental Protection Agency (EPA) is required under the Clean Air Act to establish National Ambient Air Quality Standards (NAAQS) for six common air pollutants that are known to cause harm to human health and the environment.⁹ These pollutants include: photochemical oxidants (including ozone), particulate matter, carbon monoxide, sulfur dioxide, nitrogen dioxide, and lead. Particulate matter (PM) and nitrogen dioxide (NO₂) have been measured in Chelsea and considered major contributors to poor air quality in the city.

All of the above-mentioned sources of air pollution (the airport, oil storage facilities, the Tobin Bridge, truck, marine, and automobile traffic) in addition to construction sites and industries in and adjacent to Chelsea, are the major contributors to Chelsea's particulate matter (PM) pollution.¹⁰ PM refers to a mixture of solid particles and liquid droplets found in the air.¹¹ Some examples of particles are dust, dirt, and smoke. Particulate Matter pollution includes PM₁₀, which are particles up to 10 micrometers in diameter and especially aggravate the eyes, nose and throat, and PM_{2.5} (2.5 micrometers in diameter or smaller) which are fine inhalable particles.¹² Both kinds of PM negatively impact people's health and respiratory system. Fine particles (PM_{2.5}) can be inhaled and travel deep into a person's lungs, even passing into the bloodstream, triggering an immune response and compromising the heart and lungs.¹³ Particle pollution is linked to a variety of problems including asthma, decreased lung function, irritation of the airways, difficulty breathing, coughing and can be carcinogenic. Particulate matter pollution is also associated with overall premature death.¹⁴

Diesel pollution also impacts Chelsea's air quality. In the United States alone, diesel engines and vehicles make up about a third of the entire transportation fleet.¹⁵ When diesel fuel is burned in the engines of cars, trucks, buses, ships, and off-road equipment, these emissions contribute to nitrogen dioxide (NO₂), and the larger group of nitrogen oxides (NO_x) pollution.¹⁶ Pollution from diesel exhaust also includes PM, hydrocarbons, carbon monoxide and other hazardous air pollutants known as HAPs.¹⁷ If air with high concentrations of NO₂ is inhaled, this can lead to irritation in the respiratory pathway.¹⁸ Exposure over a short period of time can aggravate respiratory diseases including asthma and can cause respiratory symptoms such as coughing, wheezing, and difficulty breathing.¹⁹ Long-term exposure can lead to the development of asthma and increase susceptibility to respiratory infections.²⁰ Diesel exhaust is also known to cause lung cancer, and positive associations have been observed between exposure to diesel engine exhaust and bladder cancer.²¹



Neris

All of my children have asthma, we have lived with prescriptions for pumps and machines and because of this, it's really important to have air—clean air!

We are also aware that in the place where we are living, we are surrounded by lots of pollution. We are surrounded by mountains of salt. We are surrounded by factories. We were relieved when one of the factories closed. But, in reality, Chelsea is really far too contaminated. It is really bad. We need more air filters, including in our neighborhood.

Fossil fuel combustion at power plants and other industrial facilities, like those located in and near Chelsea, contribute to sulfur dioxide (SO₂) emissions.²² SO₂ emissions at high concentrations can lead to the formation of sulfur oxides (SO_x) which react with compounds in the atmosphere to form small particles.²³ These particles contribute to particulate matter (PM) pollution which, when inhaled in large quantities, can cause health problems affecting the lungs.²⁴ Numerous respiratory ailments including difficulty breathing and asthma are connected to short-term exposure to SO₂.²⁵

Though outdoor air pollution is more widely spoken about in connection to negative health impacts, indoor air pollution plays a critical role as well. Mold, lead, asbestos, (emissions from) gas stoves, candle and incense burning, and secondhand smoke are examples of pollutants and sources that contribute to indoor air pollution, in addition to outside sources infiltrating indoors (e.g. buses or trucks idling outside a window).²⁶ Indoor air pollution can have a variety of immediate and long term impacts on an individual's health. Immediate health effects include irritation of the eyes, nose, and throat, dizziness, and fatigue.²⁷ Long term health effects include respiratory diseases, heart disease and cancer, which can be severe and sometimes fatal.²⁸ [See *Housing for more information.*]

In 2015, the EPA's Toxic Release Inventory (TRI) published the release of 2.1 thousand pounds of waste product expelled into the air from two of the seven bulk petroleum storage facilities along the Chelsea Creek.²⁹ The two facilities, Gulf Oil Chelsea Terminal and the Chelsea Sandwich facility, are the only ones who reported to the EPA's TRI. Of those emissions released into the atmosphere, 22% contained toluene—a chemical known to cause lung irritation—and 18% contained carcinogen benzene—a chemical known to cause cancers.^{30,31} The TRI also reported Chelsea exceeds the EPA's diesel particulate reference concentration by 20%.³² Chelsea ranks third in Massachusetts as the most intensively overburdened community for potential hazardous exposures due to the high density of environmentally hazardous industrial facilities and sites.³³

2.1K

In 2015, the EPA's Toxic Release Inventory (TRI) published the release of 2.1 thousand pounds of waste product expelled into the air from two of the seven bulk petroleum storage facilities along the Chelsea Creek.

Prevalence of Chemicals Being Released into Air (Chelsea, MA)

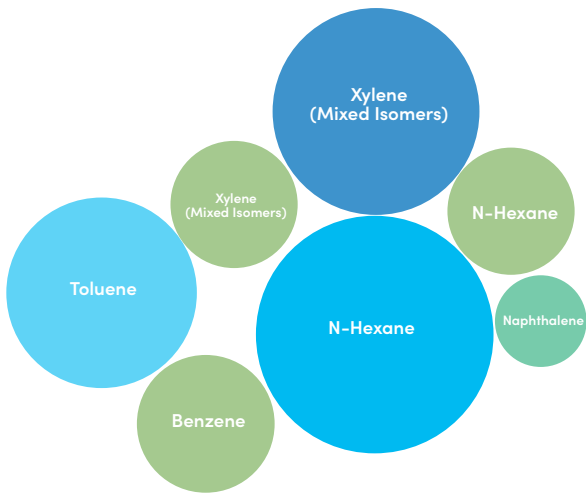


Figure 1.

Source: Scammell, M. K., Ozonoff, D.M. (2017, May 3). *Final Report: New Methods for Analysis of Cumulative Risk in Urban Populations*. United States Environmental Protection Agency. Retrieved from https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract_id/9278/report/F

In Inner Core Communities, including Chelsea, residents of color are disproportionately living in areas with the highest levels of vehicular air pollution.

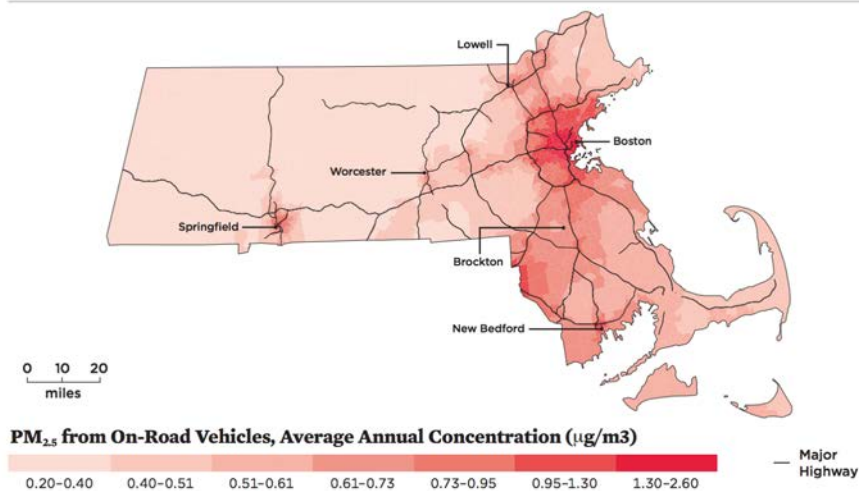
They found that for the Inner Core Communities, which includes Chelsea, residents of color are disproportionately living in areas with the highest levels of vehicle air pollution.⁴⁰ The researchers developed a Pollution Proximity Index (PPI), with high PPI values located in areas with multiple high-traffic roadways. The trends demonstrated when one moves from areas of low PPI to high PPI the share of residents of color increases as well.⁴¹ The findings of this study are consistent with the other studies listed above that illustrate the racial inequalities in air pollution exposure. This vehicular-related data does not include consideration of emissions from other types of transportation such as airplanes, ships, or trains—all which have an impact on Chelsea.

The disproportionate burden of air pollution on Black and Latinx communities across the U.S. is a trend that persists locally in Massachusetts, including in Chelsea. Researchers at the Boston University School of Public Health published a study demonstrating that concentrations of fine particulate matter pollution (PM_{2.5}) and nitrogen oxide (NO_x) were highest for Black and Latinx communities in Massachusetts.³⁴ The study also found that these inequalities worsened over time even as overall PM_{2.5} and NO_x exposure in the Commonwealth has decreased.³⁵ An additional study considered leakiness of homes, which increases air filtration from the outdoors, and found even greater exposure disparities with the leakiest homes with high outdoor air pollution located in communities with a high proportion of Latinx populations.^{36,37}

The Metropolitan Area Planning Council (MAPC) released a report in May 2020 outlining racial disparities in exposure to vehicle air pollution in the MAPC region. According to MAPC, residents of color in Massachusetts are exposed to air pollution from vehicles at higher rates compared to White residents.³⁸ Suffolk County, the most polluted county in the state, has an average concentration of PM_{2.5} from on-road vehicles that is 88% higher than the state average.³⁹



FIGURE 1. High Variation in Exposure to PM_{2.5} Pollution from On-Road Vehicles in Massachusetts



Three Massachusetts counties have average PM_{2.5} exposures higher than the state average. In Suffolk County, the most polluted, average concentration is 88 percent above the state average. Middlesex and Norfolk are the next most polluted, with concentrations 17 percent and 3 percent above the state average, respectively. High levels of PM_{2.5} are found in pockets in Springfield, bordering I-91, as well as in areas of Massachusetts east of Providence, Rhode Island, bordering I-195.

Figure 2.

Source: Pinto de Moura, M. C., Reichmuth, D. (2019, June). *Inequitable Exposure to Air Pollution From Vehicles in Massachusetts: Fact Sheet*. Union of Concerned Scientists. Retrieved from <https://www.ucsusa.org/sites/default/files/2020-05/inequitable-exposure-to-vehicle-pollution-ma.pdf>

In Spring 2020, researchers at Boston University School of Public Health also outlined vulnerability to the COVID-19 pandemic in Massachusetts. One of the many factors they explored was environmental vulnerability and poor air quality's contribution to COVID-19 infection and symptom severity. The analysis highlighted that Chelsea had one of the highest annual averages of NO₂ concentration and was in the second highest category for PM_{2.5} concentration in the state.⁴² We know there are numerous industries emitting tons of pollutants into the air on a daily basis, but easily accessible and understandable real time air quality data has been lacking. There is a strong positive correlation between poor air quality and poor environmental conditions with negative health outcomes, specifically asthma even though the causes of asthma are unknown.

Continuously breathing polluted air, indoors and outdoors, has an adverse effect on one's health and makes an individual more vulnerable to a major respiratory illness such as COVID-19. We know that exposure to a variety of air pollutants can contribute to a number of diseases including asthma, chronic obstructive pulmonary disease (COPD), heart attacks, lung disease, and various cancers.^{43, 44, 45, 46, 47} Air pollution disproportionately impacts Black and Latinx communities and is a contributing factor to the poor health outcomes seen in these communities.

The prevalence of asthma is extremely high in Massachusetts among both adults and children. The rates of asthma in Chelsea are even higher. In 2015, 10.2% of MA adults and 12.9% of children currently had asthma.⁴⁸ The prevalence of lifetime and current asthma was higher in MA than the nation.⁴⁹ From 2013-2015 the prevalence of asthma was at approximately 17% in Chelsea compared to the 11.5% state average.⁵⁰ Additionally, Chelsea ranks third in the state for asthma-related hospitalizations.⁵¹ In 2016, 91.1 per 10,000 people in Chelsea had an emergency department visit due to an asthma attack compared to the state rate of 61 per 10,000 people.⁵² In terms of pediatric asthma in Chelsea, data from recent years' reports a prevalence ranging from 4-19.8% of students in Chelsea schools.⁵³ During the 2016-2017 school year, asthma prevalence in Chelsea students was at about 10.5%.⁵⁴

20%

The TRI reported Chelsea exceeds the EPA's diesel particulate reference concentration by 20%.

Chelsea residents face nearly double the risk of respiratory illness from air pollutants and approximately 1.5x the risk of cancer compared to the rest of Massachusetts.

#3

Chelsea ranks third in the state for asthma-related hospitalizations.

9%

Exposure to hazardous air pollutants is associated with a 9% increase in COVID-19 mortality.

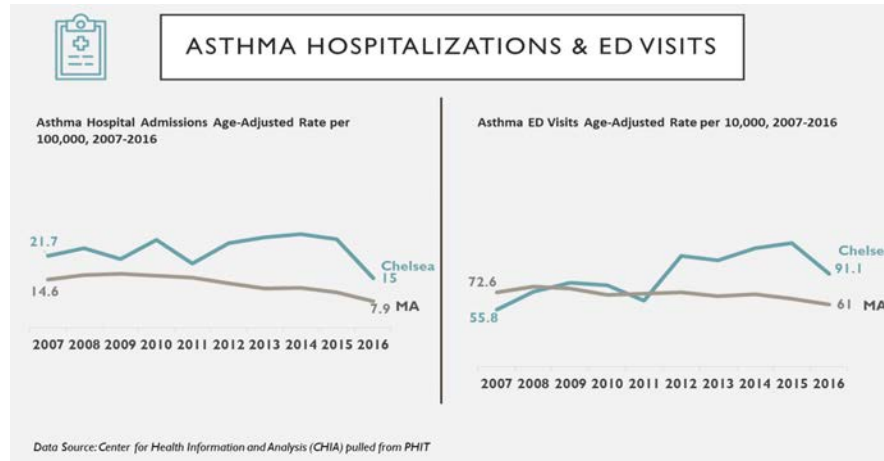


Figure 3. Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT)

In terms of other health outcomes related to air pollution, Chelsea also sees elevated rates of heart disease, lung disease, and cancer.⁵⁵ Chelsea residents face nearly double the risk of respiratory illness from air pollutants and approximately 1.5x the risk of cancer compared to the rest of Massachusetts.⁵⁶ Data from 2016 indicates that in Chelsea, 32.9% of adults over the age of 35 were hospitalized for a heart attack compared to 25.3% of adults over 35 at the state level.⁵⁷ Understanding the environmental health landscape in Chelsea is imperative to grasping COVID-19’s impact on the community. [See *Health and Health Access* for more information.]

The respiratory and heart diseases that are prevalent in Chelsea are some of the same comorbidities that make an individual more susceptible to COVID-19. Researchers at the Harvard T.H. Chan School of Public Health hypothesized that because long-term exposure to PM_{2.5} adversely affects the respiratory and cardiovascular system, it can similarly exacerbate severity of COVID-19 symptoms and furthermore increase the risk of death.⁵⁸ Their analyses confirmed this hypothesis, finding that long-term exposure to PM_{2.5} leads to a large increase in COVID-19 death rates.⁵⁹ Another report outlines that an increase in exposure to hazardous air pollutants is associated with a 9% increase

in COVID-19 mortality.⁶⁰ The likely reason for this association is that air pollutants cause respiratory distress which thereby increases vulnerability to severe illness from COVID-19. There are copious amounts of data linking fine particulate matter, nitrogen dioxide, and other harmful pollutants to COVID-19 susceptibility and death.^{61, 62, 63} Based on this research we can infer that poor air quality in Chelsea may have left the city’s residents vulnerable to the COVID-19 pandemic and at a disadvantage to fighting off the disease.





Policy Recommendations

1. Stop siting toxic facilities in Chelsea and adjacent communities.
2. Enforce air quality laws and regulations.
3. Continue to monitor Chelsea's air quality at multiple sites. Make real-time synthesis of data available to residents in clear, easy-to-understand, multilingual formats.
4. Improve indoor air quality. Install industrial-grade air purifiers in all public buildings, especially schools. Distribute indoor air purifiers to vulnerable homes and connect to health centers for asthma and COPD patients. Improve HVAC systems in public and private buildings. Incentivize landlords to improve indoor air quality.
5. Improve outdoor air quality. Implement fees on polluting facilities, including pollution from all delivery vehicles trucks (produce, salt, oil, freight and other goods). Stop and enforce illegal idling. Mandate that all public fleets be electrified. Incentivize private industries to electrify their truck fleets.

References

1. Washington, H.A. (2020, May 19). How Environmental Racism is Fueling the Coronavirus Pandemic. *Nature*. <https://doi.org/10.1038/d41586-020-01453-y>
2. Massachusetts Department of Transportation (MassDOT) Highway Division. (n.d.). Tobin Bridge/ Chelsea Curves Rehabilitation Project Fact Sheet. The Commonwealth of Massachusetts. Retrieved from <https://www.mass.gov/doc/tobin-bridgechelsea-curves-rehabilitation-project-fact-sheet-english/download>
3. Scammell, M. K., Ozonoff, D.M. (2017, May 3). Final Report: New Methods for Analysis of Cumulative Risk in Urban Populations. United States Environmental Protection Agency. Retrieved from https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract_id/9278/report/F
4. Amer, Y., & Oakes B. (2017, August 17). How Bad a Storm Could Endanger New England's Food Supply. *WBUR News*. Retrieved from <https://www.wbur.org/news/2017/08/16/new-england-produce-center-storm-surge>
5. Fort Point Associates Inc. (2016, March). Designed Port Area Fund Study: Technical Report: Waterfront Property Inventory and Infrastructure Assessment. Retrieved from Study_DPA Fund Study by Fort Point Associates 3-04-16.pdf
6. Porebski, G., Woźniak, M., & Czarnobilska, E. (2014). Residential proximity to major roadways is associated with increased prevalence of allergic respiratory symptoms in children. *Annals of agricultural and environmental medicine : AAEM*, 21(4), 760–766. <https://doi.org/10.5604/12321966.1129929>
7. Fort Point Associates Inc. (2016, March). Designed Port Area Fund Study: Technical Report: Waterfront Property Inventory and Infrastructure Assessment. Retrieved from Study_DPA Fund Study by Fort Point Associates 3-04-16.pdf
8. Dooling, S. (2017, August 16). How One Massachusetts City Came to Bear Environmental Burdens for the Region. *WNPR*. Retrieved from <https://www.wnpr.org/post/how-one-massachusetts-city-came-bear-environmental-burdens-region>
9. United States Environmental Protection Agency. (2021, March 22). Criteria Air Pollutants. Retrieved from <https://www.epa.gov/criteria-air-pollutants>
- 10-13. United States Environmental Protection Agency (2021, May 26). Particulate Matter (PM) Basics. Retrieved from <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#PM>
14. United States Environmental Protection Agency (2021, May 26). Health and Environmental Effects of Particulate Matter (PM). Retrieved from <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>
15. United States Environmental Protection Agency (2017, July 25). About Diesel Fuels. Retrieved from <https://www.epa.gov/diesel-fuel-standards/about-diesel-fuels>
16. United States Environmental Protection Agency (2016, September 18). Nitrogen Dioxide (NO₂) Pollution: Basic Information About NO₂. Retrieved from <https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2>
17. United States Environmental Protection Agency (2017, July 25). About Diesel Fuels. Retrieved from <https://www.epa.gov/diesel-fuel-standards/about-diesel-fuels>
- 18-20. United States Environmental Protection Agency (2016, September 18). Nitrogen Dioxide (NO₂) Pollution: Basic Information About NO₂. Retrieved from <https://www.epa.gov/no2-pollution/basic-information-about-no2#What%20is%20NO2>
21. Benbrahim-Tallaa, L., Baan, R.A., Grosse, Y., Luaby-Secretan, B., Ghissassi, F., & Bouvard, V. (2012, June 18). *Iarc Monographs Volume 105: Diesel and Gasoline Engine Exhaust and Some Nitroarenes*. Occupational Cancer Research Centre. [https://doi.org/10.1016/S1470-2045\(12\)70280-2](https://doi.org/10.1016/S1470-2045(12)70280-2)
- 22-25. United States Environmental Protection Agency (2019, April 2). Sulfur Dioxide (SO₂) Pollution: Sulfur Dioxide Basics. Retrieved from <https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#what%20is%20so2>
- 26-28. United States Environmental Protection Agency (2021, May 19). Indoor Air Quality: Introduction to Indoor Air Quality. Retrieved from <https://www.epa.gov/indoor-air-quality-iaq/introduction-indoor-air-quality>
- 29-30. Carlington, T., Cody, S., Gearin, J. Padmanabhan, A., (2017, December 21). Chelsea Asthma Problem. #EmersonDataViz: Home of the Emerson College Visualization Classes. Retrieved from <https://word.emerson.edu/dataviz/2017/12/21/chelsea-asthma-problem/>
31. Centers for Disease Control and Prevention (2018, April 4). Facts about Benzene. United States Department of Health and Human Services. Retrieved from <https://emergency.cdc.gov/agent/benzene/basics/facts.asp>
32. Hahn, I. (2017, May 3). Final Report: New Methods for Analysis of Cumulative Risk in Urban Populations. United States Environmental Protection Agency. Retrieved from https://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract_id/9278/report/F
33. Faber, D. R., & Krieg, E. J. (2002, April 1). Unequal Exposure to Ecological Hazards: Environmental Injustices in the Commonwealth of Massachusetts. *Environmental Health Perspectives*, Volume 110, Supplement 2. <https://doi.org/10.1289/ehp.02110s2277>
- 34-36. Rosofsky, A., Levy, J. I., Breen, M. S., Zanobetti, A. (2018, September). The Impact of Air Exchange Rate on Ambient Air Pollution Exposure and Inequalities Across All Residential Parcels in Massachusetts. *Journal of Exposure Science & Environmental Epidemiology*, 29:520–530 <https://doi.org/10.1038/s41370-018-0068-3>

37. Office of Massachusetts Attorney General Maura Healey (2020). COVID-19's Unequal Effects in Massachusetts: Remedying the Legacy of Environmental Injustice and Building Climate Resilience. The Commonwealth of Massachusetts. Retrieved from <https://www.mass.gov/doc/covid-19s-unequal-effects-in-massachusetts/download>
- 38-39. Pinto de Moura, M. C., Reichmuth, D. (2019, June). Inequitable Exposure to Air Pollution From Vehicles in Massachusetts: Fact Sheet. Union of Concerned Scientists. Retrieved from <https://www.ucsusa.org/sites/default/files/2020-05/inequitable-exposure-to-vehicle-pollution-ma.pdf>
- 40-41. Gately, C., Reardon, T. (2020, May). Racial Disparities in the Proximity to Vehicle Air Pollution in the MAPC Region. Metropolitan Area Planning Council. Retrieved from <https://www.mapc.org/pollution-disparities-covid19/>
42. Boston University School of Public Health, Department of Environmental Health. (2021). Vulnerability in Massachusetts During COVID-19 Epidemic. Retrieved from <https://bucas.maps.arcgis.com/apps/MapSeries/index.html?appid=e820a92d6bbc4c9099c59494a4e9367a#>
43. Howard, E.J., Vesper, S.J., Guthrie, B.J., Petty MA, C. R., Rambin, V. A., Sheehan, W.J., Gaffin, J. M., Permaul, P., Lai, P .S., Bartnickas, L. M., Cunningham, A., Hauptman, M., Gold, D. R., Baxi, S. N., Phipatanakul, W. (2021, March). Asthma Prevalence and Mold Levels in US Northeastern Schools. *The Journal of Allergy and Clinical Immunology: In Practice*, 9: 3; 1312-1318. <https://doi.org/10.1016/j.jaip.2020.10.012>
44. Hauptman M., Gaffin J.M., Petty C.R., Sheehan W.J., Lai P.S., Coull B., Gold D.R., Phipatanakul, J. (2019, September 23). *The Journal of Allergy and Clinical Immunology: In Practice*; 145(1), 119-126.e4. DOI: 10.1016/j.jaci.2019.08.038
45. Porebski, G., Woźniak, M., & Czarnobilska, E. (2014). Residential proximity to major roadways is associated with increased prevalence of allergic respiratory symptoms in children. *Annals of agricultural and environmental medicine : AAEM*, 21(4), 760–766. <https://doi.org/10.5604/12321966.1129929>
46. Rhee, J., Dominici, F., Zanobetti, A., Schwartz, J., Wang, Y., Di, Q., & Christiani, D. C. (2020). Risk of Acute Respiratory Distress Syndrome Among Older Adults Living Near Construction and Manufacturing Sites. *National Library of Medicine, Epidemiology*, 31(4), 468–477. <https://doi.org/10.1097/EDE.0000000000001195>
47. Tzivian L. (2011). Outdoor air pollution and asthma in children. *The Journal of asthma : official journal of the Association for the Care of Asthma*, 48(5), 470–481. <https://doi.org/10.3109/02770903.2011.570407>
- 48-49. The Commonwealth of Massachusetts. (n.d.). Statistics about Asthma. Asthma Prevention Control. Retrieved from <https://www.mass.gov/service-details/statistics-about-asthma>
50. The Commonwealth of Massachusetts (2017). Prevalence of Asthma Among Adults and Children in Massachusetts. Massachusetts Department of Health. Retrieved from <https://www.mass.gov/files/documents/2018/05/09/burden-in-mass.pdf>
51. Carlington, T., Cody, S., Gearin, J. Padmanabhan, A., (2017, December 21). Chelsea Asthma Problem. #EmersonDataViz: Home of the Emerson College Visualization Classes. Retrieved from <https://word.emerson.edu/dataviz/2017/12/21/chelseas-asthma-problem/>
52. The Commonwealth of Massachusetts (n.d.). Massachusetts Environmental Public Health Tracking: Community Profile Report for Chelsea. Massachusetts Department of Public Health & Bureau of Environmental Health. Retrieved from [https://cognos10.hhs.state.ma.us/cv10pub/cgi-bin/cognosisapi.dll \(MEPHTN -> community -> community profile -> Chelsea\) & Center for Health Information and Analysis \(CHIA\) pulled from the MA DPH Public Health Information Tool \(PHIT\)](https://cognos10.hhs.state.ma.us/cv10pub/cgi-bin/cognosisapi.dll (MEPHTN -> community -> community profile -> Chelsea) & Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT))
53. Carlington, T., Cody, S., Gearin, J. Padmanabhan, A., (2017, December 21). Chelsea Asthma Problem. #EmersonDataViz: Home of the Emerson College Visualization Classes. Retrieved from <https://word.emerson.edu/dataviz/2017/12/21/chelseas-asthma-problem/>
54. The Commonwealth of Massachusetts (n.d.). Massachusetts Environmental Public Health Tracking: Community Profile Report for Chelsea. Massachusetts Department of Public Health & Bureau of Environmental Health. Retrieved from [https://cognos10.hhs.state.ma.us/cv10pub/cgi-bin/cognosisapi.dll \(MEPHTN -> community -> community profile -> Chelsea\) & Center for Health Information and Analysis \(CHIA\) pulled from the MA DPH Public Health Information Tool \(PHIT\)](https://cognos10.hhs.state.ma.us/cv10pub/cgi-bin/cognosisapi.dll (MEPHTN -> community -> community profile -> Chelsea) & Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT))
55. Markey, E. J., Pressley, A., (2020, July 15). Letter to The Honorable Andrew R. Wheeler Administrator of the Environmental Protection Agency. Retrieved from <https://pressley.house.gov/sites/pressley.house.gov/files/Chelsea%20Air%20Quality%20Letter.pdf>
56. Best Places (n.d.) Zip 02150 (Chelsea, MA): Health in Zip 02150 (Chelsea, MA). Best Places. Retrieved from <https://www.bestplaces.net/health/zip-code/massachusetts/chelsea/02150>
57. The Commonwealth of Massachusetts (n.d.). Massachusetts Environmental Public Health Tracking: Community Profile Report for Chelsea. Massachusetts Department of Public Health & Bureau of Environmental Health. Retrieved from [https://cognos10.hhs.state.ma.us/cv10pub/cgi-bin/cognosisapi.dll \(MEPHTN -> community -> community profile -> Chelsea\) & Center for Health Information and Analysis \(CHIA\) pulled from the MA DPH Public Health Information Tool \(PHIT\)](https://cognos10.hhs.state.ma.us/cv10pub/cgi-bin/cognosisapi.dll (MEPHTN -> community -> community profile -> Chelsea) & Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT))
- 58-59. Wu, X., Nethery, R. C. (2020, April 5). Exposure to Air Pollution and Covid-19 Mortality in the United States. Harvard T.H. Chan School of Public Health, Department of Biostatistics. Retrieved from https://projects.iq.harvard.edu/files/covid-pm/files/pm_and_covid_mortality.pdf

60. Collins, M. B., Petroni, M., Hill, D., Backman, L., Howard, S., & Mirowsky, J. (202, September 11). Hazardous Air Pollutant Exposure as a Contributing Factor to COVID-19 Mortality in the United States. <https://doi.org/10.1088/1748-9326/abaf86>
61. Pozzer, A., Dominici, F., Haines, A., Witt, C., Münzel, T., Lelieveld, J. (2020, October 26). Regional and Global Contributions of Air Pollution to Risk of Death from Covid-19. *Cardiovascular Research*, 116(14) 2247-2253. <https://doi.org/10.1093/cvr/cvaa288>
62. Liang, D., Shi, L., Zhou, J., Ebel, S. T., Scovonick, N., & Chang, H.H. (2020, September 21). Urban Air Pollution May Enhance Covid-19 Case Fatality and Mortality Rates in the United States. *The Innovation*, 1(3). <https://doi.org/10.1016/j.xinn.2020.100047>
63. American Lung Association. (2021, January 4). Understanding the Link Between Covid-19 Mortality and Air Pollution. Retrieved from <https://www.lung.org/blog/covid-19-mortality-and-air-pollution>

Environment

“F”

Massachusetts was graded a failing “F” based on the proximity of dangerous facilities located within one mile of where low-income, residents of color live, compared to White, non-poor areas.

Chelsea’s urban environment plays a significant role in the short- and long-term health of its residents.

While there are certainly benefits to living in an urban environment, there are numerous environmental hazards that are unique to urban areas and that are endemic in Chelsea. Chelsea’s industrial port and major vehicular thoroughfares negatively impact air quality. The city has a low proportion of open green space, which contributes to heat islands across neighborhoods. Green spaces and trees have direct benefits to individual and community health, mental health, and well-being; and the lack of green spaces and thriving trees in Chelsea has direct consequences for population health and for heat vulnerability.

3X

Latinx residents in Massachusetts are three times more likely to live in communities that face potential chemical leaks, explosions, noise pollution, foul odor, air pollution, and numerous other threats due to the proximity to toxic industries compared to White residents.

2.5X

Children of color under age 12 are two-and-a-half times more likely to live in the shadow of a hazardous chemical facility compared to White children in Massachusetts.

<5%

Less than 5% of Chelsea's land mass is public green space.

Industrial Facilities

In 2016, the Center for Effective Government (now Project on Government Oversight) scored the state of Massachusetts a failing “F” grade based on the proximity of dangerous facilities located within one mile of where low-income, residents of color live, compared to White, non-poor areas.¹ These communities, known as “fenceline” or “frontline” communities, face potential chemical leaks, explosions, noise pollution, foul odor, air pollution, and numerous other threats due to the proximity to toxic industries.²

The inequities are startling. Latinx residents in Massachusetts are three times more likely to live in fenceline communities compared to White residents.³ The unequal exposures experienced by children is also striking: children of color under age 12 are two-and-a-half times more likely to live in the shadow of a hazardous chemical facility compared to White children in Massachusetts.⁴ Additionally, poor Latinx children are almost four times more likely to live near such facilities than White children not in poverty.⁵ We see this directly in Chelsea.

Chelsea, an environmental justice community, was ranked third most intensively overburdened community in the state, based on environmental hazards per square mile in 2005.⁶ The New England Region benefits from the industries located in and around Chelsea. These industries jeopardize residents' public health, quality of life, and more specifically, increase their vulnerability to COVID-19.

The Chelsea Creek is critically important for the New England region. As a Designated Port Area (DPA), an area zoned for water-dependent industries, the Chelsea Creek is home to fossil fuel infrastructure, road salt, and airport related industries serving Massachusetts, New England and beyond. Along this waterfront, there are four petroleum companies with seven major oil storage terminals where approximately 250M gallons of petroleum product is stored.⁷ These terminals provide 70-80% of New England's heating fuel, gasoline and ethanol for thousands of gas stations along the Eastern seaboard and 100% of the jet fuel for Boston Logan International Airport. Two other major maritime businesses in the DPA include road salt storage and a seafood processing facility. Non-water dependent uses found along the Chelsea Creek include airport parking, storage warehouses, and distribution facilities.⁸ Chelsea is also home to one of the largest

produce distribution centers in the nation; headquarters for a major meatpacking facility; the Massachusetts Water Resources Authority Chelsea Creek Headworks that processes sewerage and wastewater before going to Deer Island treatment plant; and major bridges that connect Chelsea to Boston.

Green Space

Access to spaces that are open and green is critical to one's physical and mental health. While the City of Chelsea has a total area of 2.21 square miles, the actual land mass area is 1.8 square miles (the rest of the City boundary is actually within Chelsea Creek). Less than 5% of Chelsea's land mass is public green space.



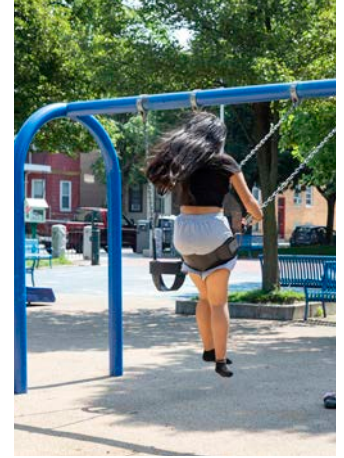
Analysis from the City of Chelsea reports 40% of Chelsea’s land is zoned for industrial and commercial purposes.⁹ The Chelsea Creek DPA comprises approximately 297 acres of land in Chelsea, Revere, and East Boston; within that DPA, only 0.2% is dedicated to open space whereas 34% and 29% are used for commercial and maritime industries respectively.¹⁰



Figure 1. Green Space in Chelsea

Source: Lichtenstein, L., Menjivar, J., Syal, D., Warford, C. (2017, December 18). *The Presence and Effectiveness of Chelsea’s Green Spaces*, *Map Journal*. Powered by Esri. Retrieved from <https://www.arcgis.com/apps/MapJournal/index.html?appid=fc9c122e27604dde9911fcfd00d6459>

Chelsea residents do not have equal access to open, green, or recreational spaces as other communities do. Only 3% of Chelsea’s land is dedicated to parks and recreation, whereas the national median is 15%.¹¹ Chelsea’s small percentage of “public green space” includes recreation areas (like playgrounds) and the historical Chelsea cemetery, which is often closed to visitors. Researchers at Tufts University counted 27 Chelsea parks, including basketball courts, school playgrounds and cemeteries; the majority of these park spaces are designed for children, ages 0-5.¹² The American Planning Association suggests that most cities in the United States use the “recreational standard” of one recreational acre per 100 residents.¹³ Total public open space in Chelsea equals 53.5 acres.¹⁴ The 2019 American Community Survey (ACS) identified 39,992 residents in Chelsea. Clearly, this recreational standard is not met, with approximately 748 ACS-identified residents per every acre of public open space.



The CDC encouraged access to green spaces during the pandemic as a critical health preventative.

3%

Only 3% of Chelsea’s land is dedicated to parks and recreation, whereas the national median is 15%.



Diana

It seemed to me a really good idea [GreenRoots' plan to create a new park along Mill Creek] to make this recreational park, because when I was here in Chelsea, that is what I was looking for. I said, I want to leave to walk somewhere but I don't want the cars interrupting my path. This park is a great idea - they had good ideas like a kayak launch, that would be really fun!

55%

Researchers found that children who grew up with the lowest levels of green space had up to 55% higher risk of developing a psychiatric disorder.

Access to nature has been related to lower levels of mortality and illness.

Green Space and Health

Researchers for the World Health Organization have conducted numerous, thorough reviews identifying the correlation between green spaces and health, mental health and well-being.¹⁵ The Center for Disease Control (CDC) also highlights the importance of green space on physical health, mental health and well-being.¹⁶ These international reviews indicate that access to green spaces increases physical activity and reduces stress. Other studies have found associations between living in areas with higher amounts of greenspace and improved immune systems and reduced mortality, particularly related to cardiovascular disease.¹⁷

The ability to access green space is also critical for young people. In younger populations, reduced access to green space negatively affects mental health. Researchers found that children who grew up with the lowest levels of green space had up to 55% higher risk of developing a psychiatric disorder.¹⁸ Living in greener neighborhoods was associated with increased IQ for young people.^{19,20} Numerous studies highlight similar findings: access to green spaces improves overall health outcomes.

A newly released study found that more access to green spaces is connected to lower racial disparities in COVID-19 infection rates.²¹ This study examined county level data across the United States, comparing the most urbanized areas, the amount of greenspace available, and the COVID-19 infection rates. Researchers found that a higher ratio of green spaces at the county level is associated with lower levels of racial disparities in COVID-19 infection rates.²²

The CDC report on green spaces, which compiled extensive existing research and data, highlights the role such open areas have in elevating physical activity and mental health—both of which are shown to improve COVID-19 outcomes. The CDC cites a leading American Public Health Association report stating, “Access to nature has been related to lower levels of mortality and illness.”²³ The CDC used this collection of findings to encourage access to green spaces during the pandemic as a critical health preventative. Chelsea's lack of green space made this challenging for residents.

During COVID-19, many communities limited or prohibited access to parks and playgrounds. In Chelsea, significant outdoor greenspaces, including Voke Park, were cordoned off. Prohibiting access to the few green spaces in Chelsea, compounded with a lack of tree canopy, significantly reduced the community's ability to enjoy the benefits of green spaces outlined above. Furthermore, during a time of heightened panic and anxiety, the benefits of green spaces for mental health were not fully realized in Chelsea.

Trees and Health

Similar to green space, access to trees improves physical health, mental health, and overall well-being. Yet, Chelsea's dearth of trees prevents residents from enjoying these tree-related health benefits. While designated a Tree City USA for its intensive efforts to plant and protect trees, the City of Chelsea's website still identifies only a 2% tree canopy.²⁴ Higher resolution satellite imagery suggests that 9% of Chelsea is covered by tree canopy, which counts the individual trees on residential properties.²⁵ Chelsea's tree canopy is still significantly lower, in comparison to the urban tree canopies of 16 other metropolitan areas examined (including Boston, New York City, and Washington D.C.).

Although Chelsea has a diversity of tree species, the health of existing trees is also a major concern. The 2016 Chelsea tree inventory found the overall inventoried population to be "fair," not "good." Furthermore, a 2019 study found that Chelsea tree health is compromised by methane gas leaks from underground utility pipes. In a comparison study of Chelsea trees in good health versus trees in Chelsea that were dying or those that recently died, the unhealthy Chelsea "case trees" had 30 times the odds of being exposed to detectable levels of soil methane in their tree pits. Findings suggest that leaky natural gas pipes may be responsible for elevated soil gas concentrations in sidewalk tree pits and subsequent tree death.²⁶

Limited access to trees and tree canopy can have direct impacts on health. Research indicates that trees decrease atmospheric pollutants and can reduce street-level air pollution by up to 60%.²⁷ Children who live on tree-lined streets have lower rates of asthma.²⁸ In densely populated New York City, an increase in street trees is associated with reduced asthma rates and hospitalizations in children.²⁹ Public housing residents with nearby trees and grass were found to be more effective in coping with stressful major life issues compared to those with homes surrounded by concrete.³⁰ Studies show that simply sitting and looking at trees reduces blood pressure as well as the stress-related hormones cortisol and adrenaline.³¹

Trees and greenspace also play a critical role in improving air quality. Vegetation, particularly trees, can actively reduce pollution in urban environments.³² They act as natural filters for both gases and particulate matter. Trees have been shown to remove fine particulate matter from the air. Modeling of the effects of urban trees on fine particulate matter in U.S. cities suggested reduced annual mortality. And, in communities with complete tree cover, trees can remove up to 15% of the ozone.³³ Both ozone and fine particulate matter affect Chelsea's air quality and impact residents' long-term health, including pre-existing conditions that make residents more susceptible to COVID-19. *[See Air Quality for more information.]*

Greenspace and trees also play an active role in mitigating urban heat island impacts. Urban greening is found to, on average, cool an urban area by 2°F during the day.³⁴ A study from Mexico City found that parks were 10.1°F cooler than immediate surrounding areas.³⁵



2%

The City of Chelsea identifies only a 2% tree canopy.



60%

Trees decrease atmospheric pollutants and can reduce street-level air pollution by up to 60%. Children who live on tree-lined streets have lower rates of asthma.

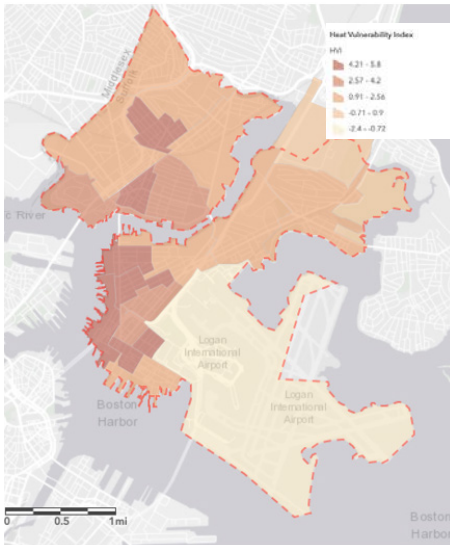


Figure 2. Chelsea Heat Vulnerability

Source: C-Heat Project (n.d). Data Dashboard. Boston University School of Public Health in collaboration with GreenRoots. Retrieved from <https://www.c-heatproject.org/datadashboard>

Chelsea registered land surface temperatures of 140 degrees in the summertime, 20–40 degrees hotter than in the nearby suburbs.

Urban Heat Island Impacts

Temperatures are rising around the world. A recent joint study between NASA and the National Oceanic and Atmospheric Administration (NOAA) found that the amount of heat the earth traps has doubled since 2005.³⁶ Globally, the annual average temperature has been rising since the beginning of the 20th century, and temperatures are expected to continue to rise through the end of this century. Worldwide, 15 of the 16 warmest years on record have occurred since 2000, with the exception of 1998.³⁷

Massachusetts also is facing rising temperatures. NOAA has tracked the steady rise of MA summer temperatures. The final year tracked—2020—was the state’s hottest on record.³⁸ Based on modeling in the Greater Boston area, the Union of Concerned Scientists predicts that mid-century, the number of days over 90 degrees will rise from an average of 11 days a year (1971–2000 average) to 41 days per year (2036–2065).³⁹

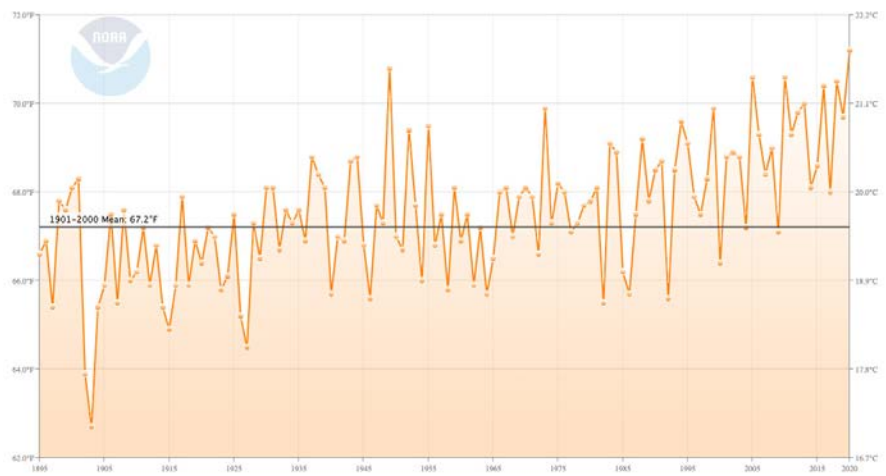


Figure 3. Massachusetts Average Summer Temperatures in June–August, 1895 to 2020

Source: NOAA National Centers for Environmental Information, (2021, August). *Climate at a Glance: Statewide Time Series*. Retrieved from <https://www.ncdc.noaa.gov/cagl>

Rising temperatures are felt more keenly in areas with urban heat island effects. According to the United States Environmental Protection Agency (EPA), a heat island is an urbanized area that experiences higher temperatures than outlying areas. Structures such as buildings, roads, and other infrastructure absorb and re-emit the sun’s heat more than natural landscapes such as forests and water bodies. Urban areas, where these structures are highly concentrated and greenery is limited, become “islands” of higher temperatures relative to outlying areas. These pockets of heat are referred to as “heat islands.”⁴⁰

Most of Chelsea is identified as a heat island or emerging heat island. Mapping conducted in 2017 by the Trust for Public Land showed parts of Chelsea registering land surface temperatures of 140 degrees in the summertime, 20-40 degrees hotter than in the nearby suburbs.⁴¹ Research conducted by the City of Chelsea, together with consultants from Weston & Samson and in collaboration with Boston University School of Public Health, documented 8 neighborhoods that currently qualify as heat islands and 11 more neighborhoods that are “emerging heat islands” (neighborhoods likely to rapidly become heat islands with escalating climate impacts).⁴² The boundaries for these heat islands areas, which comprise much of the City’s land mass, are estimates given that temperatures happen across a gradient. Mapping highlighted by the Chelsea -East Boston Heat (C-HEAT) project shows multiple Chelsea neighborhoods in the highest level of the heat vulnerability index.

The built environment plays a critical role in developing heat islands. Impervious areas like roads, parking lots, and roofs have higher thermal conductivity.⁴³ Human-made materials (like asphalt and concrete) in the urban environment tend to reflect less solar energy, and instead, absorb and emit more of the sun’s heat than natural surfaces. Approximately 80% of Chelsea is impervious surfaces.⁴⁴ Impervious surfaces also lead to increased stormwater run-off, which contributes to local water pollution and flooding when it rains.⁴⁵ Chelsea’s built environment is composed primarily of multi-family residential units, areas of commercial, industrial and urban land uses, and major roadways.⁴⁶

In addition, the dimensions and spacing of buildings can interfere with wind flow, preventing cooling effects.⁴⁷ Tall buildings and narrow streets can also reduce air flow.⁴⁸ Heat can be trapped in the “urban canyon” between buildings. The geometry of these canyons can reduce air flow and increase retention of energy from solar radiation.⁴⁹ Chelsea is the second most densely populated community in MA and ranks 26th in the nation for urban density.^{50, 51} The combination of impervious surfaces, lack of open space and tree canopy, together with building density leads to Chelsea’s Urban Heat Island Impacts.

Urban Heat and Health

With global temperatures rising and Chelsea’s documented urban heat islands, local residents’ health and well-being are likely to be impacted by extreme heat. Climate Ready Boston identified seven groups that are most vulnerable to extreme heat in the region.⁵² They define vulnerability as the disproportionate susceptibility of certain groups to the impacts of hazards; this includes a population’s resilience—the ability to adequately recover and avoid hazards as well. The most vulnerable groups include: older adults, children, people of color, people with limited English proficiency, people with low/no income, people with disabilities, people with chronic/acute illnesses. The demographics and health profiles of Chelsea residents suggest that many Chelsea residents have a high vulnerability to extreme heat. *[See Demographics and Health and Health Access for more information.]*



80%

Approximately 80% of Chelsea is impervious surfaces.

#2

Chelsea is the second most densely populated community in MA and ranks 26th in the nation for urban density.

Groups that are most vulnerable to extreme heat in the region are: older adults, children, people of color, people with limited English proficiency, people with low/no income, people with disabilities, and people with chronic/acute illness.

According to the CDC, extreme heat now causes more deaths in U.S. cities than any other weather-related event.⁵³ Heat impacts health in multiple ways, including: heat illness, respiratory and allergenic disorders, infectious diseases, maternal and child health, heart disorders, kidney disorders and mental health.⁵⁴ The CDC cites that the populations most vulnerable to heat island health impacts and mortality include: children, the elderly and economically disadvantaged groups.⁵⁵ Approximately half of Chelsea’s population lives at or below 200% of the Federal Poverty Line and many battle pre-existing health conditions.

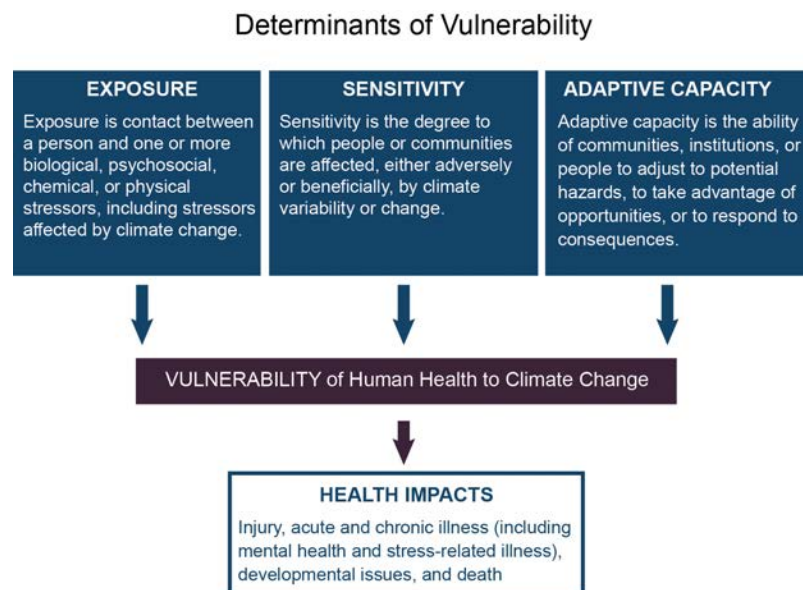
Researchers are paying close attention to the potential impacts on future health as they connect to future climate projections, including rising temperatures.⁵⁶ Historically, in Suffolk County (which includes Chelsea) the death rate increases significantly with higher temperatures; future projections show increased health impacts and rising death tolls.⁵⁷ Additionally, changes in average temperature can impact transmission of vector-borne diseases.⁵⁸

Researchers are currently exploring the relationship between heat islands and COVID-19. A recent study in India established a positive correlation between land surface temperature, urban heat islands and COVID-19 cases.⁵⁹

One way to examine the overlap between urban heat islands and COVID-19 rates is through the use of the U.S. Global Change Research Program “climate vulnerability index”, which measures climate impacts through the lenses of: exposure, sensitivity and adaptive capacity.⁶⁰ “Exposure” to heat is more pronounced for athletes, outdoor workers, those in delivery services, and those living in identified urban heat islands. “Sensitivity” is inherent pathophysiology, how an individual body, with or without other pre-existing health concerns, responds to heat. “Adaptive capacity” is our ability to counteract impacts of heat, through interventions like air conditioning and hydration. This climate vulnerability assessment shows health impacts due to climate change are disproportionate. Populations most at risk for climate-related impacts are: communities of color, low-income, immigrants and Limited English Proficiency groups. These same vulnerabilities are magnified by COVID-19.⁶¹

Figure 4. Determinants of Vulnerability to Health Impacts Associated with Climate Change

Source: Gamble, J.L., Balbus, J. (2016) Ch. 9: Populations of Concern. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. United States Global Change Research Program. Retrieved from <https://health2016.globalchange.gov/populations-concern#figure-138>





Trees improve air quality by filtering ozone and fine particulate matter; and trees mitigate extreme heat.

Research continues to point to trees and green infrastructure as a critical tool for reducing urban heat.⁶² Trees and green spaces have direct health benefits for residents; green spaces are recommended by the CDC as a critical health tool in the fight against COVID-19; trees improve air quality by filtering ozone and fine particulate matter; and trees mitigate extreme heat. With Chelsea’s low canopy cover, scant open spaces and volume of impervious surfaces, Chelsea residents are not able to reap the benefits of greenspaces and trees and are already feeling the impacts of hotter and longer heat waves. These impacts, compounded with other social determinants of health, exacerbated Chelsea residents’ vulnerability to COVID-19.

Policy Recommendations

1. **Prioritize increasing public greenspace. Convert existing vacant land into green areas. Re-zone the city to prioritize green space and mandate side yard and backyard setbacks.**
2. **Continue to implement massive tree planting campaign, and maintenance of existing trees. Make utility companies pay for damaged trees and repair gas leaks affecting Chelsea and its trees. Enact local ordinance prohibiting the removal of trees on private property without prior approval from the Tree Board.**
3. **Prioritize porous pavement and grasses. Ban harmful products (like plastics, astroturf, and recycled rubber tires) in infrastructure development and maintenance.**
4. **Incentivize landlords to implement urban heat interventions. Create incentives for homeowners to upgrade and renovate their homes in order to conserve energy and keep their homes cooled in the summertime and warm in the wintertime.**
5. **Zone for and invest resources in green and white roofs and rooftop gardens that reduce extreme heat.**

References

- 1-5. Starbuck, A. (2016, January 16). Low Income Residents and People of Color are Living Near Chemical Dangers. The Center for Effective Government. Retrieved from <https://www.foreffectivegov.org/sites/default/files/info/factsheet-massachusetts.pdf>
6. Faber, D. R., & Kreig, E. J. (2005). Unequal Exposure to Ecological Hazards: Environmental Injustices in the Commonwealth of Massachusetts. Philanthropy and Environmental Justice Research Project Northeastern University. Retrieved from <https://www.issuelab.org/resources/2980/2980.pdf>
7. Environmental Protection Agency. (2021, January 7). Environmental Justice Analysis for Clean Water Act. Retrieved from <https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/2021/crbpsf-ej-analysis.pdf>
8. Boston Harbor Now.(2018, January). Boston's Working Port: A Foundation for Innovation, Planning a 21st Century Harbor. Retrieved from <https://www.bostonharbornow.org/wp-content/uploads/2017/12/FOR-RELEASE-Bostons-Working-Port-A-Foundation-for-Innovation-v1-24.pdf>
9. Analysis from The City of Chelsea Department of Housing and Community Development
10. Boston Harbor Now.(2018, January). Boston's Working Port: A Foundation for Innovation, Planning a 21st Century Harbor. Retrieved from <https://www.bostonharbornow.org/wp-content/uploads/2017/12/FOR-RELEASE-Bostons-Working-Port-A-Foundation-for-Innovation-v1-24.pdf>
11. The Trust for Public Land. (n.d.) Chelsea, Massachusetts. Retrieved from <https://www.tpl.org/city/chelsea-massachusetts>
12. Roberts, B. (2011). Open Spaces in Chelsea, MA: Exploring Accessibility and Use by Age. Tufts University, Department of Urban and Environmental Policy & Planning. Retrieved from http://sites.tufts.edu/gis/files/2013/02/Roberts_Blake.pdf
13. Moeller, J. (1965, January). Standards for Outdoor Recreational Areas: PAS Report 194. American Planning Association: Creating Great Communities for All. Retrieved from <https://www.planning.org/pas/reports/report194.htm>
14. Roberts, B. (2011). Open Spaces in Chelsea, MA: Exploring Accessibility and Use by Age. Tufts University, Department of Urban and Environmental Policy & Planning. Retrieved from http://sites.tufts.edu/gis/files/2013/02/Roberts_Blake.pdf
15. Annerstedt van den Bosch, M., Depledge, M. H., Silveirinha de Oliveira, E., Thompson, C. W., & Wheeler, B. W., (2016). Urban Green Spaces and Health: A Review of Evidence. World Health Organizations, Regional Offices for Europe. Retrieved from https://www.euro.who.int/__data/assets/pdf_file/0005/321971/Urban-green-spaces-and-health-review-evidence.pdf
16. Slater SJ, Christiana RW, Gustat J. Recommendations for Keeping Parks and Green Space Accessible for Mental and Physical Health During COVID-19 and Other Pandemics. 2020. Center for Disease Control. Retrieved from https://www.cdc.gov/pcd/issues/2020/20_0204.htm
17. Gascon, M., Mudu, Nieuwenhuijsen, M.J., Perez-Leon, D., Rojas-Rueda, D. (2019, November 20). Green Spaces and Mortality: A Systematic Review and Meta-Analysis of Cohort Studies. *The Lancet Planetary Health*, Volume 3, Issue 11. [https://doi.org/10.1016/S2542-5196\(19\)30215-3](https://doi.org/10.1016/S2542-5196(19)30215-3)
18. Engemann, K., Pedersen, C. B., Arge, L., Tsirogiannis, C., Mortensen, P. B., & Svenning, J.C. (2020). Residential green space in childhood is associated with lower risk of psychiatric disorders from adolescence into adulthood. *Proceedings of the National Academy of Sciences of the United States of America*. <https://doi.org/10.1073/pnas.1807504116>
- 19-20. Bijmens, E.M., Derom, C., Thiery, E., Weyers, S. Nawrot, T. S., & Markevych, I. (2020) Residential green space and child intelligence and behavior across urban, suburban, and rural areas in Belgium: A longitudinal birth cohort study of twins. *PLOS Medicine*. <https://doi.org/10.1371/journal.pmed.1003213>
21. Lu, Y., Chen, L., Lui, X., Yang, Y., Sullivan, W., Xu, W., Webster, C., & Jiang, B. (2021, July). Green spaces mitigate racial disparity of health: A higher ration of green spaces indicates a lower racial disparity in SARS-CoV-2 infection rates in the USA. *Environment International*, Volume 152. <https://doi.org/10.1016/j.envint.2021.106465>
22. Heckel, J. (2021, April 28). Study Finds Green Spaces Linked to Lower Racial Disparity in COVID-19 Infection Rates. University of Illinois at Urbana-Champaign. Retrieved from <https://news.illinois.edu/view/6367/1196376765>
23. American Public Health Association. (2013, November 3). Improving Health and Wellness through Access to Nature. Retrieved from <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/08/09/18/improving-health-and-wellness-through-access-to-nature>
24. The City of Chelsea's Tree Board (n.d.) Tree Board. The City of Chelsea, Massachusetts, Boards and Commissions. Retrieved from <https://www.chelseama.gov/tree-board>
25. O'Neil-Dunne, J., (2009, July 10). A Report on Chelsea, Massachusetts's Existing and Possible Urban Tree Canopy. The University of Vermont, Forest Service Department of Agriculture. Retrieved from https://www.fs.fed.us/nrs/utc/reports/UTC_Report_Chelsea.pdf
26. Schollaert, C., Ackley, R. C., DeSantis, A., Polka, E., & Scammell, M. K. (2020). Natural Gas Leaks and Tree Death: A First Look Case-Control Study of Urban Trees in Chelsea, MA USA. Harvard T. Chan School of Public Health. Retrieved from <https://sites.sph.harvard.edu/cressh/publications/natural-gas-leaks-and-tree-death-a-first-look-case-control-study-of-urban-trees-in-chelsea-ma-usa/>
- 27-28. Davey Resource Group (2016, September). Tree Management Plan: City of Chelsea, Massachusetts. Davey Resource Group: A Division of the Davey Tree Expert Company. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/final_chelsea_management_plan.pdf

29. Lovasi, G. S., Quinn, J. W., Neckerman, K. M., Perzanowski, M. S., & Rundle, A. (2008). Children living in areas with more street trees have lower prevalence of asthma. *Journal of epidemiology and community health*, 62(7), 647–649. <https://doi.org/10.1136/jech.2007.071894>
30. Kuo F.E.(2001). Coping with poverty. Impacts of environment and attention in the inner city. *Environment and Behavior*, 33 (1) , pp. 5-34. <https://doi.org/10.1177/00139160121972846>
31. New York State Department of Environmental Conservation (n.d.). Immerse Yourself in a Forest for Better Health. Retrieved from <https://www.dec.ny.gov/lands/90720.html#Research>
32. University of Washington, College of the Environment. (2018, August 16). Reduced Risk. Green Cities: Good Health, Urban Forestry/Urban Greening Research. Retrieved from https://depts.washington.edu/hhwb/Thm_Risk.html
33. Nowak, D.J. (2002). The Effects of Urban Trees on Air Quality. USDA Forest Service. Retrieved from https://www.nrs.fs.fed.us/units/urban/local-resources/downloads/Tree_Air_Qual.pdf
34. University of Washington, College of the Environment. (2018, August 16). Reduced Risk. Green Cities: Good Health, Urban Forestry/Urban Greening Research. Retrieved from https://depts.washington.edu/hhwb/Thm_Risk.html
35. Barradas, V.L. (1991). Air temperature and humidity and human comfort index of some city parks of Mexico City. *Int J Biometeorol* 35, 24–28 (1991). <https://doi.org/10.1007/BF01040959>
36. Atkinson, J. (2021, June 15). Joint NASA, NOAA Study Finds Earth's Energy Imbalance Has Doubled. National Aeronautics and Space Administration (NASA). Retrieved from <https://www.nasa.gov/feature/langley/joint-nasa-noaa-study-finds-earths-energy-imbalance-has-doubled>
37. United States Centers for Disease Control and Prevention. (2016, October). Climate Change and Extreme Heat: What You Can Do To Prepare. United States Environmental Protection Agency. Retrieved from <https://www.cdc.gov/climateandhealth/pubs/extreme-heat-guidebook.pdf>
38. NOAA National Centers for Environmental Information, (2021, August). Climate at a Glance: Statewide Time Series. Retrieved from <https://www.ncdc.noaa.gov/cag/>
39. Abatzoglou, J., Caldas, A., Cleetus, R., Dahl, K., Delet-Barreto, J., Licker, R., Mailloux, N., Spanger-Siegfried, E., Udvardy, S., & Worth, P., (2019, July). Killer Heat in the United States: Climate Choices and the Future of Dangerously Hot Days. Union of Concerned Scientists. Retrieved from https://www.ucsusa.org/sites/default/files/2020-12/UCS_extreme_heat_report_190712b_low-res_corrected12-20.pdf
40. United States Environmental Protection Agency. (2020, July 30). Learn About Heat Islands. Retrieved from <https://www.epa.gov/heatislands/learn-about-heat-islands>
41. Bebinger, M. (2017, July 7). No Tropical Paradise: Urban 'Heat Islands' are Hotbeds for Health Problems. WBUR, Common Health. Retrieved from <https://www.wbur.org/commonhealth/2017/07/05/greater-boston-heat-islands>
42. C-Heat Project (n.d). Data Dashboard. Boston University School of Public Health in collaboration with GreenRoots Chelsea. Retrieved from <https://www.c-heatproject.org/datadashboard>
43. Myint, S. (2009, December). Modeling Urban Impervious Surfaces Areas in Relation to Urban Heat Island Effects. Arizona State University, Global Institute of Sustainability and Innovation. Retrieved from https://sustainability-innovation.asu.edu/research/project/modeling_urban_impervious_surface_areas_in_relation_to_urban_heat_island_effects/
- 44-45. C-Heat Project (n.d). Data Dashboard. Boston University School of Public Health in collaboration with GreenRoots Chelsea. Retrieved from <https://www.c-heatproject.org/datadashboard>
46. Charles River Watershed Association, Chelsea Collaborative, & Mystic River Watershed Association. (2013, June). Urban Green Infrastructure in Mystic River Communities Subwatershed Plan for Broadway, Chelsea MA. Charles River Association. Retrieved from https://www.crwa.org/uploads/1/2/6/7/126781580/chelsea_subwatershed_plan_2013.pdf
47. United States Environmental Protection Agency. (2020, July 30). Learn About Heat Islands. Retrieved from <https://www.epa.gov/heatislands/learn-about-heat-islands>
48. United States Centers for Disease Control and Prevention. (2016, October). Climate Change and Extreme Heat: What You Can Do To Prepare. United States Environmental Protection Agency. Retrieved from <https://www.cdc.gov/climateandhealth/pubs/extreme-heat-guidebook.pdf>
49. Beringer, J., Coutts, A. M., & Tapper, N., (2007). Impact of Increasing Urban Density of Urban Climate: Spatial and Temporal Variations in the Surface Energy Balance in Melbourne, Australia. *Journal of Applied Meteorology and Climatology*, 46(4), 477-493. <https://doi.org/10.1175/JAM2462.1>
50. United States Census Bureau (2010). City and Town Population Totals. Retrieved from <https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-cities-and-towns.html>
51. The City of Chelsea. (n.d.) About Our City. Retrieved from <https://www.chelseama.gov/about-our-city>
52. The City of Boston. (2017). Climate Vulnerability Assessment. Retrieved from https://www.boston.gov/sites/default/files/imce-uploads/2017-01/crb_-_focus_area_va.pdf
53. United States Centers for Disease Control and Prevention. (2016, October). Climate Change and Extreme Heat: What You Can Do To Prepare. United States Environmental Protection Agency. Retrieved from <https://www.cdc.gov/climateandhealth/pubs/extreme-heat-guidebook.pdf>

54. Metropolitan Area Planning Council. (2021, May 21). From Snow Days to Heat Waves: Climate Impacts on Heat and Health in the Boston Area. Retrieved from <https://www.mapc.org/wp-content/uploads/2021/05/May-2021-Snow-Days-to-Heat-Waves.pdf>
55. United States Centers for Disease Control and Prevention. (2016, October). Climate Change and Extreme Heat: What You Can Do To Prepare. United States Environmental Protection Agency. Retrieved from <https://www.cdc.gov/climateandhealth/pubs/extreme-heat-guidebook.pdf>
- 56-57. The City of Boston. (2017). Climate Vulnerability Assessment. Retrieved from https://www.boston.gov/sites/default/files/imce-uploads/2017-01/crb_-_focus_area_va.pdf
58. Campbell-Lendrum, D., Manga, L., Bagayoko, M., & Sommerfeld, J. (2015). Climate change and vector-borne diseases: what are the implications for public health research and policy?. *Philosophical transactions of the Royal Society of London. Series B, Biological sciences*, 370(1665), 20130552. <https://doi.org/10.1098/rstb.2013.0552>
59. Debnath, A., Mukgerjee, S. (2020, May 21). Correlation Between Land Surface Temperature and Urban Heat Island with COVID-19 in New Delhi, India. Research Square. <https://doi.org/10.21203/rs.3.rs-30416/v1>
60. Gamble, J.L., Balbus, J. (2016) Ch. 9: Populations of Concern. *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. United States Global Change Research Program. Retrieved from <https://health2016.globalchange.gov/populations-concern#figure-138>
61. University of Minnesota (2020, July 17). Talking the Relation Between Climate Change, COVID-19, and Public Health with the U of M. University of Minnesota, Talking with U of M. Retrieved from <https://twin-cities.umn.edu/news-events/talking-relation-between-climate-change-covid-19-and-public-health-u-m>
62. The Trust for Public Land. (2020, July 29). The Heat is On: A Trust for Public Land Special Report. Retrieved from https://www.tpl.org/sites/default/files/The-Heat-is-on_A-Trust-for-Public-Land_special-report.pdf

Housing



9.6%

Chelsea has the highest reported overcrowding rate in Massachusetts, with 9.6% units considered overcrowded.

Housing is an integral piece of public health and can substantially exacerbate or mitigate health during a pandemic. Housing status and quality of housing are clearly linked to the health of an individual. A critical “social determinant of health,” housing directly impacted Chelsea residents’ experiences with COVID-19. Overcrowding, lack of affordable housing options, increasing property values, housing-unit quality, and growing rates of eviction have increased the COVID-19 rates among Chelsea residents.

While population density is a risk factor in the spread of COVID-19, crowded housing appears to be a larger driving factor in the COVID-19 outbreak.

55%

45%

Redlining: 55% of Chelsea was “Definitely Declining” and 45% was “Hazardous”

Chelsea’s Housing History

For centuries, Chelsea has been a gateway city, home to diverse and varied communities. The original inhabitants were the Winnisimmet Native Americans, until 1624, when the first white settlement was established. Until the mid-nineteenth century, it served mostly as a rural resort for the Boston elite. At the turn of the century, Chelsea underwent an industrial boom, and a huge influx of Eastern European immigrants, predominantly of the Jewish faith, established Chelsea as a beautiful and ethnically rich community. Heavy industrialization combined with a small geographic footprint led to the development of extremely dense housing.¹

In response to the Great Depression in the 1930’s, President Franklin Roosevelt’s administration passed the National Housing Act of 1934. This act introduced a low-interest 30 year mortgage

program. The Home Owners’ Loan Corporation (HOLC) was created in an effort to keep households from defaulting on their mortgages. The HOLC created residential security maps that designated parts of cities into one of four color-coded categories: Best, Still Desirable, Definitely Declining, or Hazardous. These designations were used to determine which neighborhoods were eligible for home loans and which were not. Neighborhoods outlined in red were deemed hazardous and therefore, were not eligible for loans. This category was designated for, “foreign-born,” “low class white,” and “negroes.” These policies (now known as redlining) were supported by the federal government, which denied loans or insurance based on race and religion for decades and fostered racial segregation.²

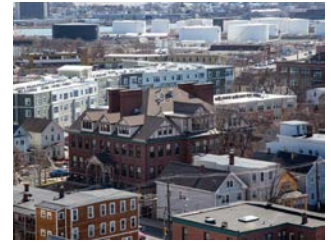


70%

With over 70 percent of residents in Chelsea as renters, there are few protections for long-term Chelsea residents to stay in their homes as rental prices rise.

Historical redlining still plays a critical role in Chelsea. Due to Chelsea’s high immigrant population in the 1930’s, it was determined that 55% of Chelsea was “Definitely Declining” and 45% was “Hazardous.” No part of Chelsea was qualified under “Best” or “Still Desirable,” which meant that loans and insurance were not offered to residents. Despite Chelsea being a thriving neighborhood, these policies barred immigrant and/or Jewish residents from becoming homeowners. Redlining led to underinvesting in the community and denying home loans, which meant residents were not able to accrue or pass on intergenerational wealth. The effects of this discriminatory practice can still be seen today in the low homeownership and high renter rates. Only 8% of Chelsea housing units are single-family homes; whereas, 50% of Chelsea housing units are buildings with 2-4 units and 17% are in buildings with 50+ units.³ With over 70 percent of residents in Chelsea as renters, there are few protections for long-term Chelsea residents to stay in their homes as rental prices rise.

Chelsea has a long history of displacement, especially for renters. Redlining in the 1930's led to underinvestments in the city and a lack of homeownership. In 1945, residents were displaced when the Tobin Bridge was built, which cut through and divided the city. Residents were again displaced due to the large fires in 1908 and 1973, in which many homes and businesses were lost. When the city went into receivership in the 1990's, some developers pulled out of their investments in the city and the economic growth in Chelsea was halted. The 2008 housing foreclosure led to developers buying up property and jacking up rent prices. This brings us to today, in which the 2020 pandemic has once again instigated displacement and high eviction rates. This section will highlight some of the housing factors that have led to such high rates of COVID-19 in Chelsea.



60%

In Chelsea, 60 percent of all housing units have two bedrooms or less, compared to 43 percent for Massachusetts.

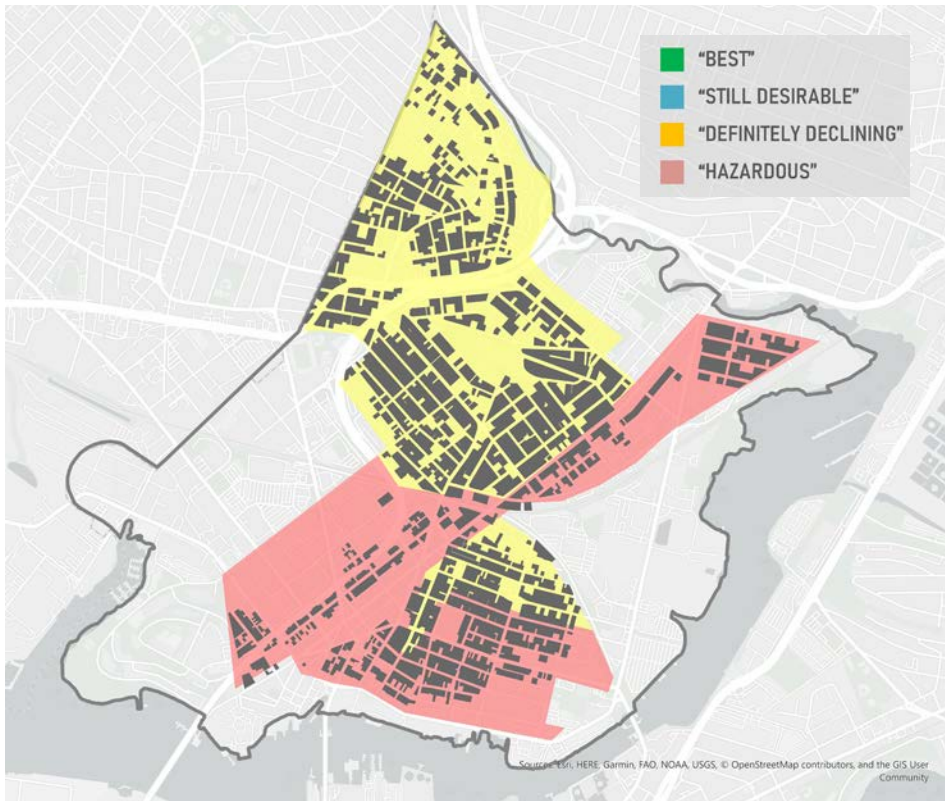


Figure 1. Redlining in Chelsea

Source: López-Hernández, I. (2020). *Redlining in Chelsea*. GreenRoots.

Overcrowding

For over a century, Chelsea has been home to various immigrant communities and has served as a relatively affordable entry point for newcomers to the Commonwealth. While multi-generational living and close family structures are often a social choice in Chelsea, the increasing housing costs have forced families into smaller and more crowded living arrangements. In the United States, immigrant workers are 4 times more likely than native-born workers to live in overcrowded housing.⁴

In Chelsea, 60 percent of all housing units have two bedrooms or less, compared to 43 percent for Massachusetts. The city's relatively small units often house large families, and these crowded conditions exacerbate public health issues such as infectious diseases.⁵



4X

Immigrant workers are 4 times more likely than native-born workers to live in overcrowded housing.

While Government officials and public health professionals recommended social distancing and isolating the sick to protect oneself from COVID-19, this can be an impossible task for many residents who live in crowded housing.⁶ Research compiled by the University of MA Donahue Institute (UMDI) found that cities with the highest concentration of overcrowded housing—which they define as a home with more than one resident per room—also have some of the highest COVID-19 outbreaks. For each additional percentage point of households that are overcrowded, the COVID-19 cases increase by 35.0 per 10,000 members of the population.

While the average household size in America is shrinking, with an average of 2.5 people per household, that trend is reversed in Chelsea. Between 2000 and 2015, the average household size grew from 2.87 to 3.0 people per household.⁷ Chelsea has the highest reported overcrowding rates in Massachusetts, with 9.6% units considered overcrowded and some of the highest reported COVID-19 infection rates.⁸ While population density is a risk factor in the spread of COVID-19, crowded housing appears to be a larger driving factor in the COVID-19 outbreak.⁹ The UMDI study compared the neighboring communities of Somerville and Cambridge, which have some of the highest density rates in the state, but with a significantly lower rate of overcrowding than places such as Chelsea. They found that density was less of an indicator for high rates of COVID-19 infections than crowded housing.¹⁰

Cities with more crowded homes have higher COVID rates.

“Crowding in Homes” is % of households with >1.0 occupants per room. COVID Case Rate per 10k residents as of July 29, 2020. 100 largest Massachusetts cities/towns.

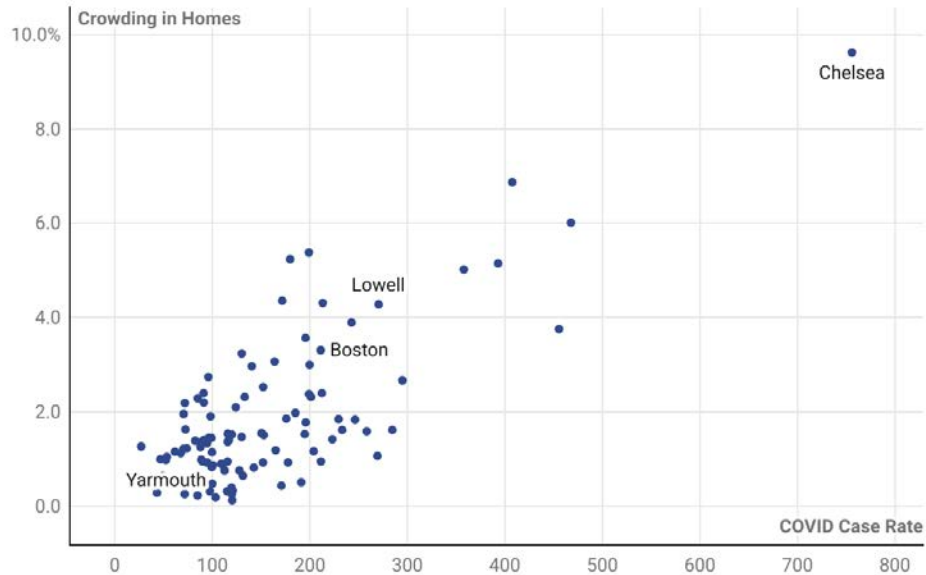


Figure 2.

Source: Boston Indicators. (2020, August 12). COVID-19’s Disparate Impact on Low-Income Communities of Color. Boston Indicators & the Economic and Public Policy Research team at the UMass Donahue Institute. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/august/equity-brief

Affordable Housing

Before the COVID-19 pandemic, residents in Chelsea were already facing a housing crisis. As one of the densest cities in Massachusetts, with rapidly rising rents, and a tight housing market, finding affordable housing was difficult. Between 2011 and 2016, monthly average rents increased 38 percent, creating an affordable housing crisis. In Chelsea, the earnings of people who work locally do not match up with the high cost of housing. On average, a full-time service worker living in Chelsea can afford to spend \$763 per month for rent and basic utilities, creating a large gap for affordable housing.¹² This discrepancy has led to high eviction rates, homelessness, and dangerous living conditions.

Rising housing costs in a community are associated with higher rates of COVID-19 infections. In a recent study by MIT, a substantial overlap between the highest rates of confirmed COVID-19 cases and the steepest five-year gains in home values were documented. Chelsea was among the top five municipalities with the Commonwealth's highest COVID-19 case rates, as well as in the top 5 percent of communities experiencing home value increases from 2015 to 2020.¹³ In communities experiencing the effects of gentrification and rising housing costs, residents are often forced into housing situations like crowding, doubling-up, homelessness, living with unrelated individuals, and taking on part-time work that may carry higher COVID-19 exposure risk.

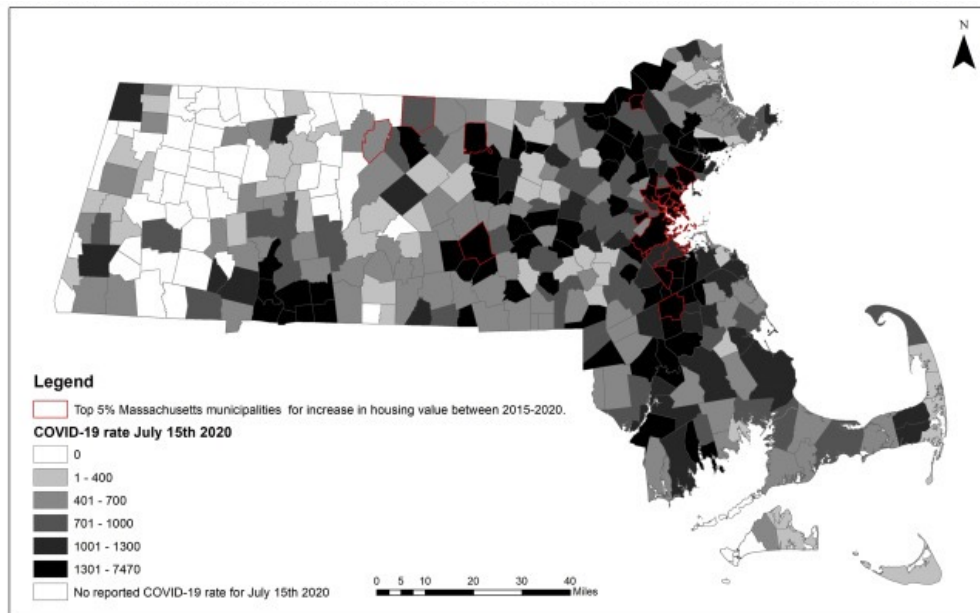


Figure 3. COVID-19 Rates and Rising Home Costs

Source: Arcaya, M. C., Niadam, Y., Binet, A., Gibson, R., & Gavin, V. (2020, August 12). *Rising Home Values and Covid-19 Case Rate in Massachusetts*. *El Savier: Social Sciences & Medicine*, Volume 265, 113290. <https://doi.org/10.1016/j.socscimed.2020.113290>

“Part of the problem here [is] with the lack of affordable housing—in order to afford to live, people double up, triple up with different families, with roommates so we do have crowded housing conditions here. And that certainly was problematic when you had a virus where people needed to isolate from one another. They shouldn’t be sharing bathrooms or living spaces and that was really impossible in a city like Chelsea.”¹¹

- Tom Ambrosino,
Chelsea City Manager

Chelsea was among the top five municipalities with the Commonwealth's highest COVID-19 case rates, as well as in the top 5 percent of communities experiencing home value increases from 2015 to 2020.

Substandard Housing

Infectious diseases have shaped the housing codes and standards of today. Housing codes originated over a century ago, and mandated minimum conditions for habitability. This was in direct response to the public health crisis requiring interventions to reduce the spread of infectious diseases and ensure safe and sanitary living conditions.¹⁵ Today, substandard housing covers a large array of factors, such as: lack of safe drinking water, mold and lead, toxic paint, asbestos, ineffective waste disposal, poor indoor air quality, infestation, poor heat and air control, and lack of sanitary access. A large body of evidence directly associates substandard housing conditions with morbidity from infectious diseases.

In Chelsea, 65 percent of all units were built before 1939.¹⁶ In addition to poor air quality, other substandard housing factors such as high rates of mold, lead, asbestos, and lack of sanitary facilities due to overcrowding can be attributed to the old housing stock. Over half (54 percent) of properties in Chelsea have had a housing code violation, the majority of which were classified as high-risk (85 percent).¹⁷ However, with a low vacancy rate of 2.1% and rising rents, there is little incentive to improve properties.¹⁸ Additionally, the high percentage of vulnerable residents in Chelsea who fear being evicted have little legal recourse to enforce a landlord to address unsafe living conditions. And improvements could also lead to higher rents, which residents may not be able to afford.

While Chelsea's outdoor air pollution is a public health focus, indoor air pollution also can have a significant impact on health. A recent study by the Center for Research on Environmental and Social Stressors in Housing (CRESSH) in partnership with GreenRoots and the Boston University and Harvard School of Public Health, examined Chelsea's indoor air quality, the indoor air pollution drivers, and the relationship

to outdoor air quality. The study examined fine particulate matter, known as $PM_{2.5}$, which are inhalable particles smaller than 2.5 microns in diameter. These particles are particularly damaging to health as they are easily inhaled, can penetrate deep in lungs, and cause a range of health problems including asthma, cardiovascular disease, and more. The study found that the amount of $PM_{2.5}$ measured in indoor air was driven by indoor source activities and behaviors (over 77% on average), rather than by outdoor air pollution. These activities were primarily cooking, smoking, and lack of use of stove range hood (which could indicate more intense cooking periods or ineffectiveness of the range hood). The study also found significantly higher levels of indoor $PM_{2.5}$ concentrations among rental and multi-family households compared to owner-occupied, single-family households. Although both renter and owner-occupied households reported cooking activity, renter and multifamily households were more likely to live in smaller units and denser apartment buildings, which could contribute to their greater indoor concentrations. In addition, these apartment units tended to be older with higher air exchange rates, in general, which could allow for greater infiltration from the outdoors and from neighboring units.¹⁹ [See *Air Quality for more information.*]



The CRESSH study found significantly higher levels of indoor $PM_{2.5}$ concentrations among rental and multi-family households compared to owner-occupied, single-family households. Higher $PM_{2.5}$ exposures are positively associated with higher COVID-19 mortality rates.

Those most impacted by poor indoor air quality are vulnerable populations who live in crowded apartments, rental and multi-family units, and those who live in older homes.

While this indoor air quality study was published before the COVID-19 pandemic, the year-long quarantine period would likely exacerbate the poor air quality problems even further, as families cooked more at home in overcrowded spaces. Those most impacted by poor indoor air quality are vulnerable populations who live in crowded apartments, rental and multi-family units, and those who live in older homes. A nationwide, cross-sectional ecological study using county-level data found that higher PM_{2.5} exposures are positively associated with higher COVID-19 mortality rates after accounting for area-level confounders.²⁰ Addressing substandard housing conditions such as inadequate ventilation, crowding, and poor sanitary conditions is paramount in a public health crisis.

Evictions

In Chelsea, the pandemic-related loss of employment and rate of sickness led to thousands falling behind on rent. In response, Governor Charlie Baker put forth an eviction moratorium from April 20 to October 17, 2020. Evictions often lead to families doubling up with relatives or friends, becoming homeless, or seeking unsafe living situations. For this reason, the moratorium

was meant to curtail the rampant spread of COVID-19. Even though thousands were unable to make money, back rent continued to accrue throughout the moratorium, which only pushed the emergency housing crisis off for a few months. Programs such as Residential Assistance for Families in Transition (RAFT) were meant to assist households when facing eviction, foreclosure, loss of utilities, and other housing emergencies caused by loss of income, increase in expenses, or both. During the pandemic, there was an expedited RAFT application, and in the

first six weeks of the pandemic, the number of RAFT recipients in Massachusetts grew by 62 percent compared to the same period in 2019.²¹ However, the long and complicated application process in some cases took months to receive rental assistance.

Recent research by City Life/ Vida Urbana and MIT revealed that prior to the pandemic, 70 percent of market rate eviction filings in Boston were concentrated in census tracts where the majority of residents are people of color. Moreover, they found that race was a better predictor of market rate eviction filings in Boston than income.²² In Chelsea, evictions can be hard to quantify due to the large immigrant, undocumented, and vulnerable population. Many tenants do not go to housing court and instead leave on their own accord to avoid the trauma of defending their tenancy in court, due to immigration status, or to avoid potential adverse impacts. Nation-wide, immigrant “self-eviction” has been noted anecdotally throughout the pandemic.²³

I have been renting my apartment for 8 years now, my son and I both receive SSI. I can't afford to go anywhere else, it is already so expensive here. It's hard for people like us, I have a disability and my son has a disability, and we can't afford to live with our incomes in our homes because of the changing rents. There is no rent control in the city.

– Anonymous



Policy Recommendations

1. Prioritize and incentivize affordable housing by: supporting re-development of existing housing stock for affordable housing; creating zoning overlay districts that incentivize affordable housing; reducing barriers for Community Development Corporations to develop affordable housing, for both rental and homeownership; preserving naturally-occurring affordable housing through conversion to deed-restricted affordable housing; and supporting community land trust efforts.
2. Support municipal efforts to create affordable housing opportunities through City-run Programs such as the Affordable Housing Trust Fund Board and the Community Preservation Committee.
3. Support efforts to keep tenants in their homes by: implementing wrap-around services for tenants in need; incentivizing landlords to work with existing tenants and extend tenancy; creating and adequately funding a rent stabilization fund; and continuing funding for rental assistance and vouchers.
4. Enact Tenant Opportunity to Purchase Act (TOPA) legislation, giving tenants the first opportunity to purchase their home.
5. Remove any presence of US Immigration and Customs Enforcement (ICE) from housing court.

References

1. Global Boston. (n.d.). Chelsea. Global Boston. Retrieved from <https://projects.iq.harvard.edu/covid-pm>
2. NPR. (2018, April 11). Housing Segregation and Redlining in America: A Short History. [Video]. Youtube. Retrieved from <https://www.youtube.com/watch?v=O5FBjyqfoLM>
3. City of Chelsea. (2017). Comprehensive housing analysis and strategic plan. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/chelsea_housing_strategy_volume_1_final_final_final.pdf
4. Camorata, S. A., & Ziegler, K. (2020, October 8). Overcrowded Housing Among Immigrant and Native-Born Workers. Center for Immigration Studies. Retrieved from <https://cis.org/Report/Overcrowded-Housing-Among-Immigrant-and-NativeBorn-Workers>
5. City of Chelsea. (2017). Comprehensive housing analysis and strategic plan. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/chelsea_housing_strategy_volume_1_final_final_final.pdf
6. Arcaya, M., & Gavin, V. (n.d.). COVID-19 and healthy neighborhoods study communities. Conservation Law Foundation. <https://www.clf.org/covid-19-and-healthy-neighborhoods-study-communities/>
7. City of Chelsea. (2017). Comprehensive housing analysis and strategic plan. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/chelsea_housing_strategy_volume_1_final_final_final.pdf
- 8-10. Melnik, M., & Raisz, A. (2020). Racial equity in housing in the COVID-19 era. Greater Boston Housing Report Card. <https://www.tbf.org/-/media/tbf/reports-and-covers/gbhrc-2020-report-2-racial-equity.pdf>
11. Brody, S., & Connerney, P. (2021, March 7). A look back at the challenging year in Chelsea with city manager Tom Ambrosino. WBUR. Retrieved from <https://www.wbur.org/commonhealth/2021/03/07/chelsea-city-manager-year-of-pandemic>
12. City of Chelsea. (2017). Comprehensive housing analysis and strategic plan. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/chelsea_housing_strategy_volume_1_final_final_final.pdf
13. Arcaya, M. C., Niadam, Y., Binet, A., Gibson, R., & Gavin, V. (2020, August 12). Rising Home Values and Covid-19 Case Rate in Massachusetts. *El Savier: Social Sciences & Medicine*, Volume 265, 113290. <https://doi.org/10.1016/j.socscimed.2020.113290>
14. Logan, T. (2020, November, 18). Infections and evictions are intertwined in Chelsea. *Boston Globe*. <https://www.bostonglobe.com/2020/11/18/business/infections-evictions-are-intertwined-chelsea/>
15. Robb, K. (2020, June 17). How cities can use housing data to predict COVID-19 hotspots: Lessons from Chelsea, MA. *Data Smart City Solutions*. Retrieved from <https://datasmart.ash.harvard.edu/news/article/how-cities-can-use-housing-data-predict-covid-19-hotspots-lessons-chelsea-ma>
16. City of Chelsea. (2017). Comprehensive housing analysis and strategic plan. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/chelsea_housing_strategy_volume_1_final_final_final.pdf
17. Robb, K. (2020, June 17). How cities can use housing data to predict COVID-19 hotspots: Lessons from Chelsea, MA. *Data Smart City Solutions*. Retrieved from <https://datasmart.ash.harvard.edu/news/article/how-cities-can-use-housing-data-predict-covid-19-hotspots-lessons-chelsea-ma>
18. City of Chelsea. (2017). Comprehensive housing analysis and strategic plan. Retrieved from https://www.chelseama.gov/sites/g/files/vyhlf396/f/uploads/chelsea_housing_strategy_volume_1_final_final_final.pdf
19. Chu, M.T., Gilooly, S.E., Levy, J.I., Vallarino, J., Reyna, L.N., Cedeño Laurent, J.G., Coull, B.A., & Adamkiewicz, G. (2020). Real-time indoor PM_{2.5} monitoring in an urban cohort: Implications for exposure disparities and source control. *Environmental Research*, 193(110561). doi: 10.1016/j.envres.2020.110561. <https://sites.sph.harvard.edu/cressh/real-time-indoor-pm2-5-monitoring-in-an-urban-cohort-implications-for-exposure-disparities-and-source-control/>
20. Wu, X., Nethery, R. C., Sabath, M. B., Braun, D. and Dominici, F. (2020). Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis. *Science advances*, 6(45), p.eabd4049. Retrieved from <https://projects.iq.harvard.edu/covid-pm>
21. Clark, C., Hopper, T., & Munson, L. (2020, November 23). One month after the moratorium, evictions on the rise. *Boston Indicators*. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/november/rising-evictions
22. Greenberg, Z. (2020, November 13). Public health officials fear evictions could worsen COVID-19 spike in Mass. *Boston Globe*. Retrieved from https://www.bostonglobe.com/2020/11/12/nation/public-health-officials-fear-evictions-could-worsen-covid-19-spike-mass/?p1=StaffPage&p1=Article_Inline_Text_Link
23. Garnham, J. P., & Venkataramanan, M. (2020, July 22). Undocumented Immigrants Behind on Their Rent are Self-Evicting across Texas. *The Texas Tribune*. Retrieved from <https://www.texastribune.org/2020/07/22/evictions-texas-undocumented-immigrants/>

Food: Access and Insecurity



71%

Within the past 12 months, 71% of Chelsea respondents stated that they often or sometimes worried their food would run out before they got money to buy more at the end of the month.

The inability to access healthy foods impacts people's health outcomes. In Chelsea, the high volume of convenience stores, sparse number of major supermarkets within a quarter mile, low car-ownership, as well as financial constraints impact residents' capacity to purchase and consume the nutritious foods necessary to lead healthy lives. Rates of obesity, diabetes and other diet-related illnesses such as cardiovascular diseases are heightened because of this. COVID-19 exacerbated these issues, increasing residents' reliance on food pantries and emergency food distribution sites and additionally left residents with comorbidities at higher risk for severe illness related to COVID-19.

In 2017, the Massachusetts Public Health Association identified Chelsea as having the state's worst access to grocery stores and fresh food.



19%

In 2019, the Greater Boston Food Bank reported the food insecurity rate in Massachusetts was 19% overall.

Chelsea residents have long struggled with food access, insecurity and hunger. When the pandemic hit, the City of Chelsea saw the immediate impacts of food insecurity unfold. Food pantry lines spanned blocks, families debated whether their limited income should be spent on rent or food, and others doubted their eligibility for public benefits such as SNAP.¹ Food insecurity, poverty, and health outcomes intersect in a feedback loop which has been exacerbated by the COVID-19 pandemic.

Pre-COVID-19 Food Insecurity in the U.S., Massachusetts, and Chelsea

Though closely related, food insecurity and hunger are distinct concepts. Hunger refers to the physical sensation of discomfort from the lack of food.^{2,3} Food insecurity on the other hand, refers to having limited or uncertain access to adequate, healthy food.⁴ Hunger is the potential consequence of food insecurity because prolonged periods without sufficient nutrients can result in physical uneasiness. Food insecurity is impacted by intersecting aspects of the various social determinants including poverty, chronic health problems, lack of affordable housing, and social isolation.⁵ As a social determinant itself, food insecurity has a direct impact on individual and population health outcomes.⁶

The issue of food insecurity is extremely prevalent in the United States. Feeding America and analysis from the Boston Indicators both report, in 2019, that the food insecurity rate in Massachusetts was 8.2% and 9% for households with children.^{7,8} The overall food insecurity rate in Suffolk County was 10.6% and 14.2% for children in 2019 according to Feeding America.⁹ However, the Greater Boston Food Bank, a local food bank working on the ground to combat food insecurity in the Greater Boston region, reports a much higher need. In 2019, they reported the food insecurity rate in Massachusetts was 19% overall. The Greater Boston Food Bank also reports the food insecurity rate for households with children to be 27% versus 14% for households without children.¹⁰



Diana

We arrived in Chelsea and there weren't any jobs. Thank God, when we arrived, there was food and diapers. It was a huge help. We almost didn't need money to live because there was food. The boxes of milk and yogurt helped us a lot. WIC gave me formula, and everything else, they proportioned out really well! WIC is a huge help.

Food access can be measured in a variety of ways, including the following indicators: accessibility to healthy food measured by distance to or number of stores, individual resources such as income or vehicle availability, and neighborhood indicators such as average income and public transit availability.¹¹ In 2017, the Massachusetts Public Health Association identified Chelsea as the top city in the state with the worst access to grocery stores and fresh food.¹²

Though comprehensive data is difficult to pinpoint, community based surveys have captured the need for affordable and healthy food in Chelsea. According to the 2019 North Suffolk Community Health Needs Assessment Community Survey, 82% of respondents indicated that food prices impacted where they shopped for groceries, and 44% of respondents indicated that the distance to stores impacted their shopping habits.¹³ Respondents indicated that 31% of households own no vehicles and 41% of households own one vehicle.¹⁴ A place with inconvenient access to grocery stores is known as a food desert and is linked to higher rates of obesity, diabetes, and other diet-related diseases.¹⁵



Food access can be measured in a variety of ways, including the following indicators: accessibility to healthy food measured by distance to or number of stores, individual resources such as income or vehicle availability, and neighborhood indicators such as average income and public transit availability.

Healthy Chelsea and The Chelsea Hunger Network conducted a Community Food Assessment in 2019, which highlighted food insecurity before the pandemic, barriers to accessing food, as well as the food assistance resources Chelsea residents relied on. Some key pre-pandemic takeaways include:¹⁶

- 71%** → Within the past 12 months (from survey date), 71% of respondents stated that they often or sometimes worried their food would run out before they got money to buy more at the end of the month.
- 60%** → Within the past 12 months (from survey date), 60% of respondents stated that the food they bought didn't last and they didn't have money to buy more at the end of the month.
- 42.55%** → 42.55% of the respondents relied on SNAP for food assistance
- 25.45%** → 25.45% relied on the special supplemental nutrition program for Women, Infants, and Children (WIC) for food assistance
- 25.45%** → 25.45% relied on school lunch for food assistance

Not aware of food resources, needing resources but not qualifying, and transportation issues are among the top three reasons respondents did not access food resources.

- 39.2%** → 39.2% of respondents walked to grocery stores
- 48%** → 48% of respondents didn't eat fruits and vegetables because they are "too expensive"
- 38.43%** → 38.43% of respondents indicated that "improved transportation/mobility" would be a solution to accessing the food they need or want

This data is reflected in the significant need seen during the pandemic in Chelsea.

44%

31%

According to the Greater Boston Food Bank, in 2019 the food insecurity rate for Latinx and Black adults in Massachusetts was 44% and 31% respectively.

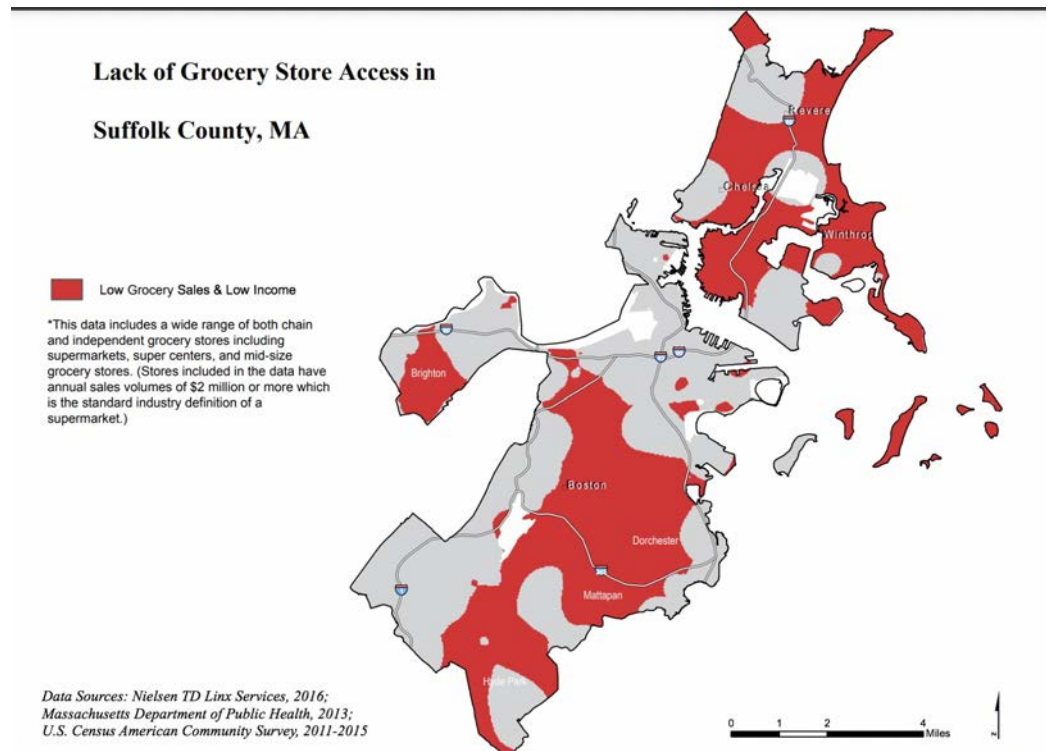


Figure 1.

Source: Massachusetts Public Health Association. (n.d.). Massachusetts Food Trust Program. Retrieved from <https://mapublichealth.org/priorities/access-to-healthy-affordable-food/ma-food-trust-program/>

Systemic and structural racism play an influential role in the disproportionate effect of food insecurity on people of color. In the U.S., 1 in 12 White (non-Latinx) individuals live in a food-insecure household, compared to 1 in 6 Latinx, 1 in 5 Black (non-Latinx), and 1 in 4 Native American individuals.¹⁷ In Massachusetts, a similar pattern plays out. According to the Greater Boston Food Bank, in 2019 the food insecurity rate for Latinx and Black adults in Massachusetts was 44% and 31% respectively.¹⁸ As the COVID-19 pandemic hit, food insecurity rates worsened for all, but the impact on Black, Latinx, and Indigenous communities was the greatest.¹⁹

The Impact of Food Insecurity on Health

The ability to access nutritious, affordable, and healthy foods is imperative to maintaining proper health and well-being. Food insecurity has a profound impact on the health of individuals and can contribute to adverse health outcomes. Research demonstrates that food insecurity is detrimental to the physical and mental health of both adults and children.^{20, 21, 22} Food insecurity is associated with increased risk for a variety of chronic diseases, health conditions, and health behaviors in children, adults, and seniors. In children, food insecurity is associated with developmental risk, behavioral and social-emotional problems, as well as mental health problems to name a few. In adults, food insecurity is linked with cancer, chronic obstructive pulmonary disease (COPD), coronary heart disease and many more. Lastly in seniors, food insecurity can lead to congestive heart failure, heart attacks, and osteoporosis. Asthma, obesity, diabetes, and other cardiovascular diseases are some chronic conditions impacting all age groups.²³ Not only may the pandemic contribute to a rise in the burden of these diseases but these chronic diseases are known risk factors for COVID-19.²⁴ Therefore, food insecurity could increase chances of morbidity and mortality related to COVID-19.²⁵

The lack of healthy and affordable food options in Chelsea have implications on health outcomes. In Chelsea in 2014, the age-adjusted rate per 100,000 for cardiovascular disease hospital admissions and emergency department visits were 1807.5 and 838.1 respectively.²⁶ Similarly in Chelsea in the same year, the age-adjusted rate per 100,000 for diabetes hospital admissions and emergency department visits were 255.5 and 283.4 respectively.²⁷ Both cardiovascular disease and diabetes rates are significantly higher than the state's rates.

In 2019, 47% of 1st graders, 57% of 4th graders, 62% of 7th graders, and 49% of 10th graders in the Chelsea Public School system were overweight or obese.²⁸ These percentages are higher than the average percentages of overweight or obese public school students in Massachusetts. Childhood obesity is a concern for Chelsea residents, citing easy access to fast food restaurants as a reason for the rise in obesity rates.²⁹ Residents surveyed in the 2019 Community Health Needs Assessment also mentioned that people are more likely to turn to fast food restaurants when hungry due to the lower prices and larger portions- all of which are appealing to those trying to feed a big family on a tight budget.³⁰

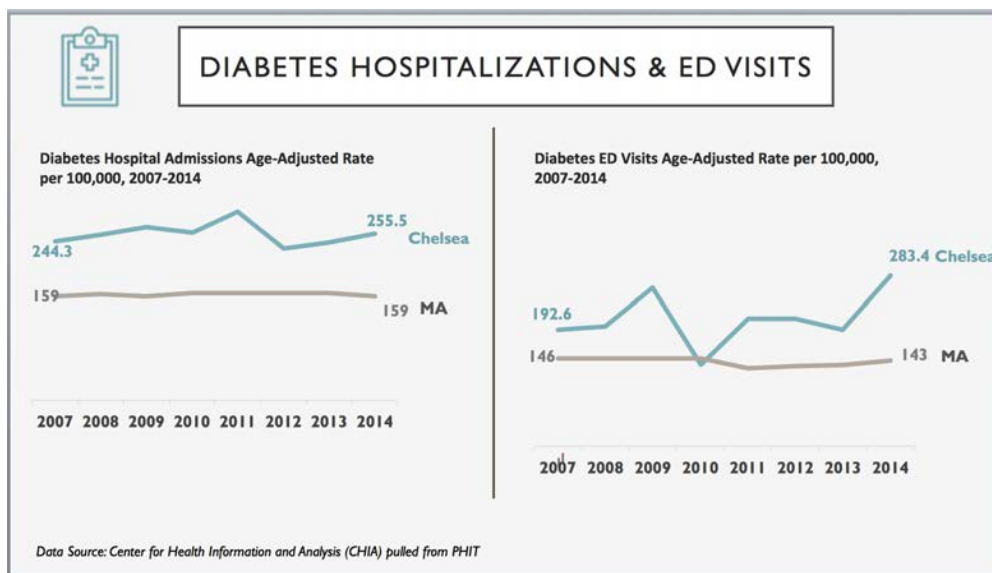


Figure 2.
Source: Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT)

Food insecurity has had a huge impact on the health systems in Massachusetts as well. In a collaborative study between the Children's HealthWatch and The Greater Boston Food Bank, they outline the adverse health outcomes associated with food insecurity including depression, obesity, asthma, and diabetes. They estimated that in 2016 alone, food insecurity and hunger cost the state of Massachusetts \$2.4 billion in health related expenses.³¹ Addressing food insecurity is necessary in order to combat these enormous costs and to prioritize the health of communities.

Prior to COVID-19, low-income people of color experienced a disproportionate burden of food insecurity as well as increased rates of chronic disease.^{32, 33} Systemic racism, economic and health disparities, a fragile food system, and a stressed health care system are some of the factors which have contributed to these populations experiencing the worst COVID-19 outcomes.³⁴

CHRONIC DISEASES ASSOCIATED WITH FOOD INSECURITY

- Asthma
- Cancer
- COPD
- Obesity
- Diabetes
- Osteoporosis
- Cardiovascular diseases



55%

Based on survey results from the Greater Boston Food Bank, the immediate lockdown, COVID-19 pandemic, and financial instability have increased the food insecurity rate in Massachusetts by 55%.

Chelsea Food Security and COVID-19

The issues of food insecurity, hunger, poverty, and health outcomes are interconnected as part of a larger, vicious feedback loop.³⁵ The relationship between these challenges have been put under unique stress due to the pandemic, which has ultimately worsened the risk of COVID-19 infection, transmission, and morbidity.³⁶ Additionally, unemployment and poverty are two of the biggest factors contributing to soaring food insecurity rates, both of which have increased as layoffs and economic instability occurred during the pandemic.³⁷

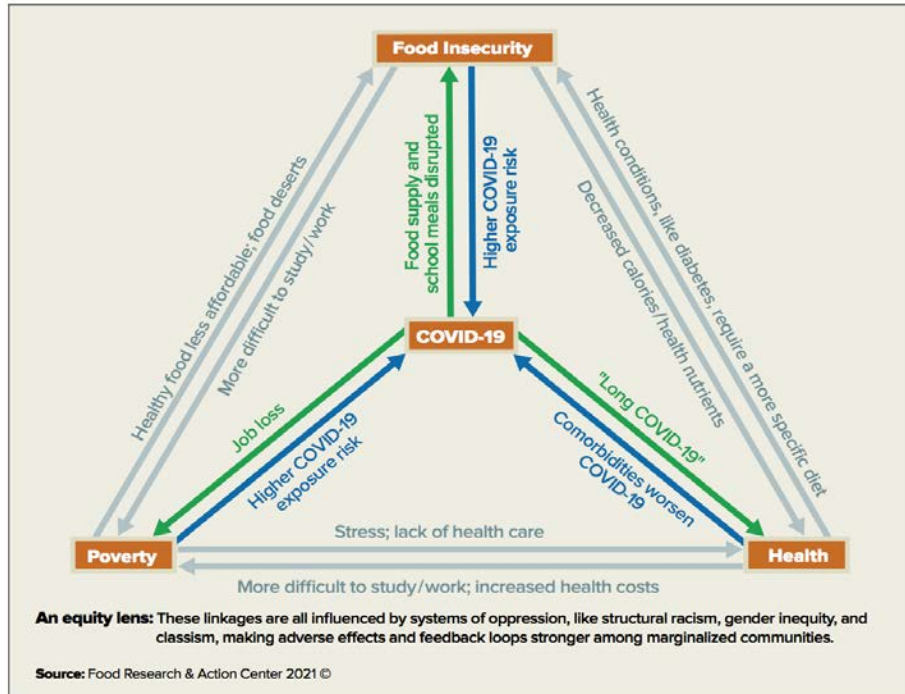


Figure 3. Linkages Between Food Insecurity, Poverty and Health During COVID-19

Source: Food Research and Action Center. (2021, May). *Linkages Between Food Insecurity, Poverty, and Health During Covid-19*. Retrieved from https://frac.org/wp-content/uploads/Linkages_2021.pdf

The impact of COVID-19 on food insecurity is considerable. Feeding America projected that, in 2020, due to the COVID-19 pandemic, Massachusetts will be the state with the largest change in food insecurity (59% increase) and child food insecurity (102% increase) in the country.³⁸ Based on survey results from the Greater Boston Food Bank, the immediate lockdown, COVID-19 pandemic, and financial instability have increased the food insecurity rate in Massachusetts by 55%, with 30% of 1.6 million adults experiencing food insecurity.³⁹ On the other hand, Project Bread, an anti-hunger organization in East Boston, MA reports food insecurity to be on the decline as the state reopens, with 12.3% of households facing food insecurity in Massachusetts as of July 2021.⁴⁰ Project Bread additionally reports that the percentage of food insecure households with children in Massachusetts has decreased from 23.6% in May 2020 to 17.2% in July 2021. As of May 2021, the Greater Boston Food Bank reports that the food insecurity rate in Chelsea is 16%.⁴¹ This translates to 1 in 6 Chelsea residents are experiencing food insecurity. The Greater Boston Food Bank acknowledges that this number may be an underestimation based on the amount of food that has been distributed to the city.

The pandemic highlighted racial disparities in food insecurity. The impact of food insecurity on Black and Latinx households is much greater, and the ability to recover from the impact of the pandemic is much slower compared to White households.^{42,43} Based on survey results from the Greater Boston Food Bank, the COVID-19 pandemic has increased the food insecurity rate for Latinx and Black populations in Massachusetts to 58% and 45% respectively. Project Bread reports the food insecurity rate for Massachusetts’s Latinx and Black households with children to be 29.3% compared to 13.8% of White households from December 2020 to May 2021.⁴⁴ A study from the Massachusetts Immigrant and Refugee Advocacy Coalition (MIRA), demonstrates that immigrants, especially those who are undocumented, disproportionately struggle with food insecurity.⁴⁵

In Chelsea, there were many efforts led by the city, community organizations, and food pantries to mitigate the impact of food insecurity during the pandemic. Before the pandemic, the Chelsea Hunger Network estimated that approximately 2,700 boxes of food were distributed on a monthly basis. During the pandemic, the number skyrocketed to approximately 60,000-80,000 boxes of food being distributed every month.⁴⁶ This trend is similar for the number of fresh meals available to residents, with many grab & go distribution sites popping up throughout the city. The Greater Boston Food Bank also reports that it had a 193% increase in the pounds of food distributed to Chelsea from March-July 2020 to March-July 2021.⁴⁷ The need in Chelsea was, and continues to be, present.

In June 2020, the Shah Family Foundation along with the City of Chelsea released an analysis outlining the need for food. They found:⁴⁸

- >17,000** → residents were likely picking up food from the city’s emergency program
- 9,000** → residents were buying food themselves
- 8,820** → residents were on the federal food assistance program (SNAP)
- 7,000** → residents were receiving food from pantries
- 2,000** → residents were picking up boxes of food from schools
- 250** → residents were receiving senior delivery meals
- 5,000** → residents were ineligible for federal programs, living off little to no income, and unable to feed their families exclusively from free-meal sites.

Based on the analysis, it was clear that more needed to be done in order to close the food access gap. The Shah Family Foundation, in collaboration with the City of Chelsea, the United Way and Mass General Hospital created the Chelsea Eats program to address the need. The program provided cash assistance, from \$200 to \$400 (which was based on household size), to approximately 2,000 residents who were chosen through a lottery system.⁴⁹

60-80K

Before the pandemic, the Chelsea Hunger Network estimated that approximately 2,700 boxes of food were distributed on a monthly basis. During the pandemic, the number skyrocketed to approximately 60,000-80,000 boxes of food being distributed every month.

The Greater Boston Food Bank reports that it had a 193% increase in the pounds of food distributed to Chelsea from March-July 2020 to March-July 2021.

67%

67% of Chelsea residents surveyed reported having been food insecure in the past year, the highest percentage of the 14 districts surveyed.

27.5%

As of June 2021, SNAP enrollment was 27.5% higher than it was in May 2019.

Researchers at the Harvard Kennedy School's Rappaport Institute, evaluated the impact of the Chelsea Eats program. They conducted a baseline survey of recipients of the card, in September and November 2020, which found 90% of participants identified as Latinx, 80% identified as female, and approximately 80% had at least one child in the household.⁵⁰ 82% of recipients had experienced financial hardship in the past year including job loss, work hour/pay reduction, health emergency, or price increase of food or other essential items. Additionally, 32% of households contained at least one household member who had been sick with COVID-19. When evaluating food insecurity, researchers found only 12.4% of respondents answered that they had "enough of the kinds of food we want to eat" versus 67% of Massachusetts Census Pulse Survey respondents. Additionally, 49% of Chelsea respondents reported "sometimes" or "often" not enough to eat versus only 7.3% of the Massachusetts respondents overall.⁵¹ When asked to indicate if their children under the age of 18 were not eating enough because they couldn't afford enough food, 13% of respondents replied "often true" and 41% replied "sometimes" true in the September 2020 survey.⁵² This represents a high rate of child food insecurity. These survey results demonstrated how households participating in the Chelsea Eats program were experiencing high levels of food insecurity and financial distress.⁵³

In May 2021, researchers released a spending update on the Chelsea Eats Card. Though the card is marketed as a food debit card program, recipients are able to use the card wherever Visa is accepted. They found that 73.3% of spending occurred at places where food is the primary product and 32% of total spending was at Market Basket grocery stores.⁵⁴ Further research will be released to outline the program's impact on reducing food insecurity.

The Chelsea Eats Program was one of the first experimental guaranteed income programs and the largest in terms of number of participants in the United States; it empowered residents to purchase their own food and meet any other economical needs. The program was designed to have complementary functions as well. One of those was to increase the use of public programs such as Supplemental Nutrition Assistance Program (SNAP), Pandemic-EBT (P-EBT), and school meals.⁵⁵ SNAP provides monthly benefits to eligible low-income people to purchase food.⁵⁶ The program plays a critical role in reducing hunger. The P-EBT provided nutritional assistance to families with children who have lost access to free or reduced priced meals due to school closures.⁵⁷

There are many residents who qualify for SNAP, yet are not utilizing the benefit, this is referred to as the SNAP Gap. In 2018, the SNAP Gap, which is the difference between the number of low-income Massachusetts residents receiving MassHealth who are likely SNAP eligible versus the number of people actually receiving SNAP, was 59% for Chelsea residents.⁵⁸ During the pandemic, closing the SNAP Gap was essential in addressing food insecurity, but many residents needed assistance learning about their eligibility for this benefit.

The MassInc Polling Group released a study outlining the lessons learned from the P-EBT and how to increase access to SNAP during the pandemic. 67% of Chelsea residents surveyed reported having been food insecure in the past year, the highest percentage of the 14 districts surveyed. Many of the surveyed individuals found the P-EBT to be useful during the pandemic, but only 32% received SNAP benefits during this time.⁵⁹ Immigration was among one of the top concerns for Chelsea participants who had not applied for SNAP. Many people did not know of the SNAP changes during the pandemic, and say they would have applied if they knew otherwise. *[See Immigrants and Immigration Policy for more information.]*

SNAP enrollment data from Project Bread shows that Massachusetts continues to see increases in enrollment from May 2019. As of June 2021, enrollment is 27.5% higher than it was in May 2019.⁶⁰ Project Bread also operates a FoodSource Hotline, which connects people to reliable sources of food and assists with SNAP enrollment. Data from the hotline shows that calls from around the state increased more than five times when comparing July and August 2019 to the same period in 2020.⁶¹

Before the pandemic, Chelsea residents endured considerable barriers to healthy, nutritious foods. Food insecurity exacerbates chronic diseases seen in our community and is linked to severe COVID-19 illness. While these barriers still exist, concerted efforts to address food insecurity can have lasting positive impacts on the health of the community. Initiatives like SNAP, P-EBT, the Chelsea Eats Program, food pantries and urban growing spaces help those who are most disadvantaged battle hunger, poverty, and overcome poor health.



Policy Recommendations

1. Adequately fund and support local food pantries.
2. Expand Supplemental Nutrition Assistance Program (SNAP) access.
3. Continue to fund the Chelsea Eats program. Expand access so all applicants can benefit, instead of the current lottery system.
4. Support and expand community gardens and urban farm programming. Promote use of container gardens. Expand learning and growing opportunities for local food.
5. Expand healthy eating opportunities. Incentivize convenience store retrofits to allow for fresh foods at the entrance with refrigeration. Provide vouchers for residents to purchase healthy foods. Enact local ordinances that prevent establishment of additional fast food restaurants and mandate a certain percentage of food to be fresh. Expand healthy eating curriculum in schools. Support healthy eating and healthy cooking classes for families.

References

1. The Massachusetts Food Access Project, Harvard Kennedy School. (n.d.). Massachusetts Food Access During Covid-19. Retrieved from <https://www.massfoodaccess.org/>
2. Feeding America. (n.d.). Understanding Food Insecurity. Retrieved from <https://hungerandhealth.feedingamerica.org/understand-food-insecurity/>
3. Wunderlich, G. & Norwood, J. (2006). Food Insecurity and Hunger in the United States: An Assessment of the Measure. The National Academies Press. Retrieved from <https://www.nap.edu/read/11578/chapter/1>
4. Hake, M., Dewey, A., Engelhard, E., Strayer, M., Dawes, S., & Summerfeit, T.(2021, March). The impact of Coronavirus on Food Insecurity in 2020 and 2021. Feeding America. Retrieved from https://www.feedingamerica.org/sites/default/files/2021-03/National%20Projections%20Brief_3.9.2021_0.pdf
- 5-6. Feeding America. (n.d.). Understanding Food Insecurity. Retrieved from <https://hungerandhealth.feedingamerica.org/understand-food-insecurity/>
7. Feeding America. (2019). Hunger and Poverty in Massachusetts. Retrieved from <https://map.feedingamerica.org/county/2019/overall/massachusetts>
8. Mattos, T., Poblacion, A. Leran, M., Lemmerman, J., Bruce, C., Schuster, L., & Ettinger de Cuba, S., (2020, October 6). Food Insecurity Has Doubled During the Pandemic. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/october/food-insecurity
9. Feeding America. (2019). Hunger and Poverty in Massachusetts. Retrieved from <https://map.feedingamerica.org/county/2019/overall/massachusetts>
10. Zack, R., Birk, N., Weil, R., Lynn, C.D., Taitebaum, D., Tienken, C., & Fiechtner, L. (2021, May). Gaps In Food Access: During the COVID-19 Pandemic in Massachusetts. Greater Boston Food Bank. Retrieved from https://www.gbfb.org/wp-content/uploads/2021/04/GBFB_Gaps_in_Food_Access_Report_Final_May_2021.pdf
11. United States Department of Agriculture, Economic Research Service. (n.d.). Food Access Research Atlas. Retrieved from <https://www.ers.usda.gov/data-products/food-access-research-atlas/documentation/>
12. Massachusetts Public Health Association. (n.d.). Massachusetts Food Trust Program. Retrieved from <https://mapublichealth.org/priorities/access-to-healthy-affordable-food/ma-food-trust-program/>
13. 2019 North Suffolk Community Health Needs Assessment Community Survey
14. American Community Survey (ACS), 2014-2018, Table DP04
15. Massachusetts Local Action Food Plan. (2015). Food Access and Health: a 2015 Snapshot of conditions in Massachusetts and goals of the MA Local Food Action Plan. Retrieved from <https://mafoodsystem.org/media/resources/pdfs/FASH.pdf>
16. Healthy Chelsea/ Chelsea Hunger Network 2019 Community Food Assessment Survey
17. Hake, M., Dewey, A., Engelhard, E., Strayer, M., Dawes, S., & Summerfeit, T.(2021, March). The impact of Coronavirus on Food Insecurity in 2020 and 2021. Feeding America. Retrieved from https://www.feedingamerica.org/sites/default/files/2021-03/National%20Projections%20Brief_3.9.2021_0.pdf
18. Zack, R., Birk, N., Weil, R., Lynn, C.D., Taitebaum, D., Tienken, C., & Fiechtner, L. (2021, May). Gaps In Food Access: During the COVID-19 Pandemic in Massachusetts. Greater Boston Food Bank. Retrieved from https://www.gbfb.org/wp-content/uploads/2021/04/GBFB_Gaps_in_Food_Access_Report_Final_May_2021.pdf
19. Project Bread. (2021). Get the Facts: the latest data in food insecurity in Massachusetts. Retrieved from <https://www.projectbread.org/hunger-by-the-numbers>
20. Cook, J. T., Frank, D. A., Berkowitz, C., Black, M. M., Casey, P. H., Cutts, D. B., Meyers, A. F., Zaldivar, N., Skalicky, A., Levenson, S., Heeren, T., & Nord, M. (2004). Food insecurity is associated with adverse health outcomes among human infants and toddlers. *The Journal of nutrition*, 134(6), 1432–1438. <https://doi.org/10.1093/jn/134.6.##>
21. Cook, J.T., & Frank, D.A. (2008, July 25). Food Insecurity, Poverty, and Human Development in the United States. *Annals of the New York Academy of Sciences*. <https://doi.org/10.1196/annals.1425.001>
22. Cook, J. T., Black, M., Chilton, M., Cutts, D., Ettinger de Cuba, S., Heeren, T. C., Rose-Jacobs, R., Sandel, M., Casey, P. H., Coleman, S., Weiss, I., & Frank, D. A. (2013). Are food insecurity's health impacts underestimated in the U.S. population? Marginal food security also predicts adverse health outcomes in young U.S. children and mothers. *Advances in nutrition* (Bethesda, Md.), 4(1), 51–61. <https://doi.org/10.3945/an.112.003228>
23. Food Research and Action Center. (2017, December). The Impact of Poverty, Food Insecurity, and Poor Nutrition on Health and Well-Being. Retrieved from <https://frac.org/wp-content/uploads/hunger-health-impact-poverty-food-insecurity-health-well-being.pdf>
- 24-25. Leddy, A.M., Weiser, S.D., Palar, K., & Seligman, H. (2020, November). A conceptual model for understanding the rapid COVID-19–related increase in food insecurity and its impact on health and healthcare, *The American Journal of Clinical Nutrition*, Volume 112, Issue 5, Pages 1162–1169, <https://doi.org/10.1093/ajcn/nqaa226>

- 26-27. Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT)
28. Chelsea Public School District, MDPH
29. MassGeneral Hospital: Center for Community Health Improvements. (2019). Community Health Needs Assessment Report. Retrieved from <https://www.massgeneral.org/assets/MGH/pdf/community-health/cchi/20191016-CHNA-report.pdf>
30. MassGeneral Hospital: Center for Community Health Improvements. (2019). Community Health Needs Assessment Report. Retrieved from <https://www.massgeneral.org/assets/MGH/pdf/community-health/cchi/20191016-CHNA-report.pdf>
31. Cook, J.T., & Poblacion, A. (2016). An Avoidable 2.4 Billion Cost: the Estimated Health Related Cost of Food Insecurity and Hunger in Massachusetts. Greater Boston Food Bank. Retrieved from <https://www.macostofhunger.org/wp-content/uploads/2018/02/full-report.pdf>
32. Center for Disease Control and Prevention. (2019, April). Health, United States Spotlight: Racial and Ethnic Disparities in Heart Disease. Retrieved from https://www.cdc.gov/nchs/hsu/spotlight/HeartDiseaseSpotlight_2019_0404.pdf
33. Center for Disease Control and Prevention. (2020). Diabetes 2019 Report Card. US Department of Health and Human Services. Retrieved from <https://www.cdc.gov/diabetes/pdfs/library/Diabetes-Report-Card-2019-508.pdf>
34. Leddy, A.M., Weiser, S.D., Palar, K., & Seligman, H. (2020, November). A conceptual model for understanding the rapid COVID-19–related increase in food insecurity and its impact on health and healthcare, *The American Journal of Clinical Nutrition*, Volume 112, Issue 5, Pages 1162–1169, <https://doi.org/10.1093/ajcn/nqaa226>
35. Food Research and Action Center. (2021, May). Linkages Between Food Insecurity, Poverty, and Health During Covid-19. Retrieved from https://frac.org/wp-content/uploads/Linkages_-2021.pdf
36. Nagata, J. M., Seligman, H. K., & Weiser, S. D. (2021). Perspective: The Convergence of Coronavirus Disease 2019 (COVID-19) and Food Insecurity in the United States. *Advances in nutrition* (Bethesda, Md.), 12(2), 287–290. <https://doi.org/10.1093/advances/nmaa126>
- 37-38. Hake, M., Dewey, A., Engelhard, E., Strayer, M., Dawes, S., & Summerfeit, T.(2021, March). The impact of Coronavirus on Food Insecurity in 2020 and 2021. *Feeding America*. Retrieved from https://www.feedingamerica.org/sites/default/files/2021-03/National%20Projections%20Brief_3.9.2021_0.pdf
39. Zack, R., Birk, N., Weil, R., Lynn, C.D., Taitebaum, D., Tienken, C., & Fiechtner, L. (2021, May). Gaps In Food Access: During the COVID-19 Pandemic in Massachusetts. Greater Boston Food Bank. Retrieved from https://www.gbfb.org/wp-content/uploads/2021/04/GBFB_Gaps_in_Food_Access_Report_Final_May_2021.pdf
40. Project Bread. (2021). Get the Facts: the latest data in food insecurity in Massachusetts. Retrieved from <https://www.projectbread.org/hunger-by-the-numbers>
41. The Greater Boston Food Bank. (2021). Fy 2021 Progress Towards 3 Meals a Day. Retrieved from <https://gbfb.maps.arcgis.com/apps/webappviewer/index.html?id=470f46975951455785b85a26d478dfc5>
- 42-43. Food Research and Action Center. (2021). Hunger Poverty and Health During Covid-19: Spotlight: Black Communities. Retrieved from https://frac.org/wp-content/uploads/HPH_Black-Communities_2021.pdf
44. Project Bread. (2021). Get the Facts: the latest data in food insecurity in Massachusetts. Retrieved from <https://www.projectbread.org/hunger-by-the-numbers>
45. Davis, M. (2020, August). The Impact of COVID-19 on Immigrants in Massachusetts: Insights from Our Community Survey. Massachusetts Immigrant and Refugee Commission (MIRA). Retrieved from <https://www.miracoalition.org/wp-content/uploads/2020/08/MIRA-COVID-19-survey-report-Aug2020.pdf>
46. The Chelsea Hunger Network
47. The Greater Boston Food Bank
48. Wilson, R., & Shah, J. (2021, March 19). Food Insecurity: Use Guaranteed Income to Support Vulnerable Residents. Boston Indicators & Shah Family Foundation. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/recovery-series/guaranteed_income
- 49-53. Liebman, J., Carlson, K., Novick, E., & Portocarrero, P. (2021, March). The Chelsea Eats Report: Findings from the Baseline Survey. Chelsea Eats, Harvard Kennedy School: Rappaport Institute of Greater Boston. Retrieved from <https://www.hks.harvard.edu/sites/default/files/Taubman/Chelsea%20Eats%20Study%20--%20Findings%20from%20the%20Baseline%20Surveys.pdf>
54. Liebman, J., Carlson, K., Novick, E., & Portocarrero, P. (2021, May). Chelsea Eats Study: Card Spending Update. Harvard Kennedy School: Rappaport Institute of Greater Boston. Retrieved from <https://www.hks.harvard.edu/sites/default/files/Taubman/Research/ChelseaEatsCardSpendingMay2021.pdf>
55. Wilson, R., & Shah, J. (2021, March 19). Food Insecurity: Use Guaranteed Income to Support Vulnerable Residents. Boston Indicators & Shah Family Foundation. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/recovery-series/guaranteed_income
56. Food Research and Action Center. (n.d.). Supplemental Nutrition Assistance Program. Retrieved from <https://frac.org/programs/supplemental-nutrition-assistance-program-snap>
57. Food Research and Action Center. (n.d.). Pandemic EBT. Retrieved from <https://frac.org/pebt>

58. Food Bank of Western MA. (n.d.) Retrieved from <https://public.tableau.com/app/profile/food.bank.of.western.ma>
59. Koczela, S., Parr, R., & Basma, R. (2021, June). Lessons from P-EBT to Increase Access to SNAP: A Survey of Public School Parents in Targeted Mass Districts. The Shah Family Foundation. Retrieved from <https://files.constantcontact.com/e6e14db6301/af351886-c2c6-4d38-a578-57cb87008980.pdf>
60. Project Bread. (2021). Get the Facts: the latest data in food insecurity in Massachusetts. Retrieved from <https://www.projectbread.org/hunger-by-the-numbers>
61. Mattos, T., Poblacion, A. Leran, M., Lemmerman, J., Bruce, C., Schuster, L., & Ettinger de Cuba, S., (2020, October 6). Food Insecurity Has Doubled During the Pandemic. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/october/food-insecurity

Health and Health Access



963.8

The age-adjusted mortality rate per 100,000 was significantly higher in Chelsea (963.8) compared to Massachusetts' rate (668.9).

COVID-19 has overwhelmed health systems across the country and has exposed the inequities and barriers within healthcare in the U.S., which often leave low-income people and people of color behind. These barriers impact accessibility, affordability, and quality of care received by patients. In turn, they contribute to the poor health outcomes predominantly seen in low-income communities of color like Chelsea, where high rates of comorbidities leave residents especially disadvantaged to fight off COVID-19. Lack of health insurance, immigration-related fears, and communication barriers all contributed to Chelsea residents' experience during the pandemic.

Chelsea's hospital admission rates for cardiovascular diseases, diabetes, asthma, and chronic obstructive pulmonary disease (COPD) are worse than the state's rates.

“Race doesn’t put you at higher risk. Racism puts you at higher risk. It does so through two mechanisms: People of color are more infected because we are more exposed and less protected. Then, once infected, we are more likely to die because we carry a greater burden of chronic diseases from living in disinvested communities with poor food options [and] poisoned air and because we have less access to health care.”¹

- Camara Phyllis Jones,
Epidemiologist and Family
Physician

Our health and well-being have been jeopardized as the SARS-CoV-2 (COVID-19) virus ravages communities. The social determinants of health, such as those explored throughout this report, impact a wide range of health conditions and outcomes. Disparities and inequities within the social determinants of health contribute to a rise in chronic diseases that overall can be detrimental to people’s quality of life. Pre-existing chronic diseases are a downstream result of upstream social determinants of health, meaning that essentials like housing, access to green space, ability to afford and acquire nutritious foods and living in a healthy environment influence health outcomes and the probability of having chronic diseases.

Comorbidities in Chelsea and COVID-19

Measurements such as morbidity rate, mortality rate, incidence and prevalence are frequently used in epidemiology to study the causes, distribution, and outcomes of diseases across populations. Morbidity refers to the condition or state of having a specific illness or disease.² These diseases can be acute or chronic and a person can suffer from multiple morbidities at a time, also known as comorbidities.³ Morbidity data can be expressed in two ways: incidence and prevalence. Incidence refers to the occurrence of new cases of diseases within a population during a specific time frame; this determines the probability of being diagnosed with a disease and is expressed as a proportion or a rate.^{4,5} Prevalence, which includes new and existing cases unlike incidence, is the proportion of the population that has a disease; this determines a person’s likelihood of having a disease.⁶ Mortality, on the other hand, refers to the number of deaths that have occurred due to a specific illness. There are a variety of mortality measurements, including crude death rate, which is the total number of deaths during a given time interval.^{7,8} Both of these measurements, morbidity and mortality, are often expressed as a proportion or rate.

A variety of comorbidities contribute to mortality rates. In 2016, the age-adjusted mortality rate per 100,000 was significantly higher in Chelsea (963.8) compared to Massachusetts’ rate (668.9).⁹ That same year, the premature mortality age-adjusted rate per 100,000 (the number of deaths to residents under the age of 75) in Chelsea was 471.5 compared to the state rate of 282.2.¹⁰ Diseases such as asthma, obesity and various cardiovascular diseases, among others, contribute to these outcomes in Chelsea.

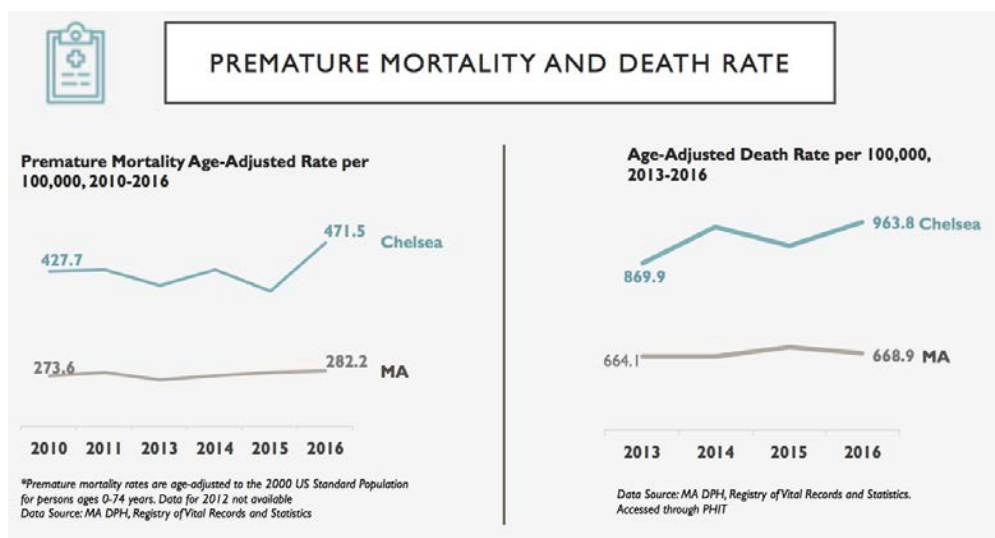


Figure 1.
Source: MA DPH, Registry of Vital Records and Statistics Accessed through PHIT

Cardiovascular diseases, diabetes, asthma, and chronic obstructive pulmonary disease (COPD) are some of the diseases impacting Chelsea residents the most. Rates for hospital admissions visits for the following diseases are all greater in Chelsea compared to the state's rates.

- For cardiovascular diseases in 2014, the hospital admission age-adjusted rate per 100,000 was 1807.5 compared to the state rate of 1563.¹¹
- For diabetes in 2014, the hospital admission age-adjusted rate per 100,000 was 255.5 compared to the state rate of 159.¹²
- For asthma in 2016, the hospital admission age-adjusted rate per 100,000 was 15 compared to the state rate of 7.9.¹³
- For COPD in 2014, the hospital admission age-adjusted rate per 100,000 was 55.4 compared to the state rate of 25.¹⁴

Cancer rates in Chelsea are also noteworthy. In 2016, the female breast cancer crude death rate was 17.06 compared to 11.84 at the state level. This is a drastic increase from the prior year when the crude death rate for breast cancer was only 2.84 in Chelsea.¹⁵ From 2011-2015, the standardized incidence rates for cancer of all types for males was 90.6 and 108.6 for females.¹⁶ In Chelsea males, the incidence rate for lung cancer was highest in comparison to all types of cancers.¹⁷ Among females, the incidence rate for cervical cancer was highest.¹⁸ These chronic diseases are exacerbated by intersecting social determinants of health that burden Chelsea residents.

Environmental factors have direct connections to the health and well-being of Chelsea residents. Poor air quality, lack of greenspace, and rising temperatures contribute to high rates of respiratory and cardiovascular diseases, such as asthma and COPD as demonstrated above. [See *Air Quality for more information.*] Additionally, food insecurity impacts the rates of food-related diseases seen in Chelsea, such as diabetes and childhood obesity. [See *Food: Access and Insecurity for more information.*]

Mental health, reproductive health, and substance abuse are not explicitly explored within this report. However, in 2019, 75% of respondents surveyed for the Community Health Needs Assessment indicated that *alcohol, drug use, addiction, and overdose* was their top health concern; additionally, 41% indicated *mental health* was a top concern.¹⁹ From 2007 to 2014 hospitalizations related to heroin overdose steadily increased.²⁰ In 2014, the hospital admission age-adjusted rate per 100,000 for heroin overdose was 116.7 in Chelsea. In 2017, there were 14 opioid-related overdose deaths.²¹ Additionally for mental health in 2014, the hospital admission and emergency department visits age-adjusted rate per 100,000 was 3581.5 and 1353.1 respectively.²² The state reported in 2014, the hospital admission and emergency departments visits age-adjusted rate per 100,000 to be 2466 and 934 respectively. Chelsea's rates for hospital admission for heroin overdose and mental health emergency room admissions are all higher than state reported rates. The overall hepatitis C rate per 100,000 in 2017 was 96.8 and the HIV rate per 100,000 for new diagnosis in the same year was 19.9.²³ This is noteworthy because substance abuse disorders, as well as some sexually transmitted diseases—like HIV/AIDS and Hepatitis C—make individuals more susceptible to COVID-19 and increase the likelihood of severe illness.^{24, 25, 26, 27}

75%

75% of respondents surveyed for the Community Health Needs Assessment indicated that *alcohol, drug use, addiction, and overdose* was their top health concern.



People with a history of hypertension, obesity, chronic lung disease (e.g. asthma, chronic obstructive pulmonary disease (COPD), and lung cancer), diabetes, and cardiovascular disease have a worse COVID-19 prognosis.

The impact of comorbidities on COVID-19 severity has been explored since the emergence of the novel virus. An early study outlined that “COVID-19, in those with underlying health conditions or comorbidities, has an increasingly rapid and severe progression, often leading to death.”²⁸ People with a history of hypertension, obesity, chronic lung disease (e.g. asthma, chronic obstructive pulmonary disease (COPD), and lung cancer), diabetes, and cardiovascular disease have a worse COVID-19 prognosis.²⁹ These are some of the same diseases impacting Chelsea residents the most. Residents’ high rate of varying comorbidities had direct correlations to the severity of impact of COVID-19 in Chelsea.

Health Insurance Coverage and Health

Healthcare coverage is essential in order to access quality care; coverage and care access ultimately impacts health outcomes in communities. The United States’ health system has a mix of public and private insurers. The federal government provides funding for Medicare, which insures adults aged 65 and older and some individuals with disabilities, as well as Medicaid, which insures low-income adults, children, pregnant women, elderly adults and people with disabilities.³⁰ In Massachusetts, Medicaid and the Children’s Health Insurance Program (CHIP) are combined into MassHealth.³¹

In Massachusetts, people receive health care coverage from a variety of sources:³²

55.9% of the population receives coverage from their employer

4.3% of the population are covered by both Medicaid and Medicare, also known as dual eligibles

15.2% of the population are covered by Medicaid only

4.6% of the population are covered by Medicare only

3% of the population is uninsured

The rest of the population receives coverage through the military, private insurance, or non-group insurance.

On January 1, 2014 under the Affordable Care Act (ACA), states were able to make the decision whether they wanted to expand Medicaid eligibility or not. On the exact day the ruling went into effect, Massachusetts adopted and implemented the Medicaid expansion.³³ Studies have found there to be a positive correlation between Medicaid expansion and a variety of outcomes including access and utilization of care, insurance coverage, and health outcomes. Studies indicate there have been coverage gains and a decline in uninsured rates among low-income populations.³⁴ In addition to coverage, research has demonstrated that the Medicaid expansion has improved access to care, utilization of services, the affordability of care, and financial security among low-income populations.³⁵ Lastly, other analyses exhibit the expansion to be associated with decreased mortality, reductions in rates of food security, poverty, and home evictions; as well as improvement in self-reported health and healthy behaviors.³⁶

Due to the implementation of Medicaid expansion (MassHealth), more residents in Chelsea were provided coverage. In Chelsea, 92.6% of the population have health insurance.³⁷ 58.5% of the insured population have public health insurance (MassHealth and Medicare), 40.6% have private health insurance, and 7.4% of Chelsea’s population have no health insurance.³⁸ There are different types of health insurance people can choose to enroll in. Of the insured population in Chelsea, 45% have Medicaid. This indicates many residents are low-income and rely heavily on health insurance provided by the federal and state government.³⁹ Additionally, of the insured population in Chelsea, 41% have employer-based health insurance.⁴⁰ This indicates another portion of residents rely heavily on their employers for coverage, which could, therefore, be lost due to unemployment. Chelsea has the highest percentage of people insured under Medicaid and the lowest percentage of people insured under employer-based health insurance compared to neighboring cities such as Everett and Revere. Of the uninsured population, 64% identify as Latinx, 34% identify as White, and 2% identify as Black.⁴¹

The COVID-19 pandemic overwhelmed health care systems and has highlighted the need for health care reform. Job loss and potential loss of employer-provided health insurance, coupled with financial instability all associated with the pandemic, have repercussions on people’s ability to afford health care.⁴² Even before the pandemic, those with employer-sponsored coverage say they themselves or a family member have delayed medical treatment due to cost of care.⁴³ The Affordable Care Act (ACA) and the following Medicaid expansion prompted large gains in coverage, but there were those who fell through the gaps.

Low-income individuals and people of color remain at a disproportionate risk of being uninsured.⁴⁴ The number of uninsured people in the U.S. has steadily increased from 2016 to 2019, with the pandemic likely exacerbating this number as well. In 2019, there were 28.9 million nonelderly individuals uninsured.⁴⁵ The drop in coverage was driven by declines in Medicaid and non-group coverage and was predominant among children and Latinx individuals- who were already at an increased risk of being uninsured.^{46, 47} Policy changes by the Trump Administration, immigration-related fear, and an increase in unemployment during the pandemic were among, and continue to be, some of the contributing factors to an increase in disparities within the healthcare system and are barriers for those seeking care.^{48, 49} Researchers additionally saw a direct correlation between the Public Charge ruling and health coverage disenrollment. *[See Immigrants and Immigration Policy for more information.]*

58.5%

58.5% of Chelsea’s insured population have public health insurance (MassHealth and Medicare).

7.4%

7.4% of Chelsea’s population have no health insurance.

Racial/Ethnic Distribution of Growth in the Nonelderly Uninsured Between 2018 and 2019

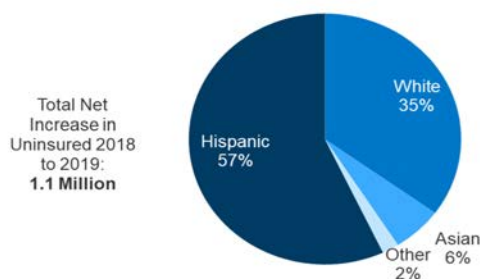


Figure 2. Source: Artiga, S., Tolbert, J., & Orgera, K. (2020, November 6). *Hispanic People are Facing Widening Gaps in Health Coverage.* Kaiser Family Foundation. Retrieved from <https://www.kff.org/policy-watch/hispanic-people-facing-widening-gaps-health-coverage/>

Health, Health Care and Treatment Disparities

Health Disparities are Driven by Social and Economic Inequities

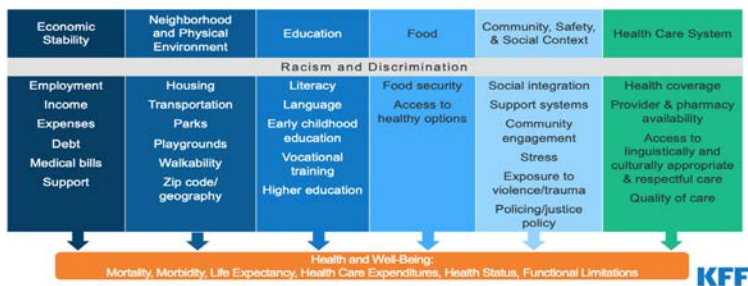


Figure 3.

Source: Ndugga, N. & Artiga, A. (2021, May 11). *Disparities in Health and Health Care: 5 Key Questions and Answers*. Kaiser Family Foundation. Retrieved from <https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/>

There are a variety of other barriers within the healthcare system that deter people from seeking care, even when necessary. Before the pandemic, survey results from the North Suffolk Community Health Needs Assessment indicate that cost (30%), long wait times (25%), insurance (19%), inconvenient hours (18%), and no available doctors (11%) are the top 5 barriers for Chelsea residents seeking non-emergency medical care.⁵¹ High rates of unemployment, financial constraints, and overburdened health systems during the pandemic may have exacerbated the existing barriers felt by residents. As mentioned above immigration-related changes and concerns may have contributed to disparities, especially for Latinx populations during the COVID-19 pandemic.

“Racism, cultural mistrust, miscommunication, chronic illness bred by limited food and living choices, and lived experience bind together communities of color as disparate as the Navajo Nation and Chelsea, Massachusetts,”⁵⁰

- Thomas D. Sequist, MD, MPH, testimony before the United States House of Representatives Ways and Means Committee on May 27, 2020

Immigration policy and immigration-related fear may have impeded families from maintaining their coverage and pursuing care. This is extremely relevant in Chelsea, due to the sizable foreign-born population. Researchers at the Journal of the American Medical Association (JAMA) released a study outlining the health impact of COVID-19 on immigrants. They found:⁵²

- 23.8% of immigrants believed that they must have proof of legal residency to be eligible for low-cost or free treatment for COVID-19.
- 26.5% of immigrants believed that hospital emergency departments were the only source for COVID-19-related testing and treatment for uninsured immigrants.
- 34.8% believed that most medical providers would deny COVID-19 care if an immigrant did not have valid state identification.
- 27.4% believed that using public services for COVID-19-related testing and treatment could jeopardize an individual’s immigration prospects by drawing attention to immigration status.
- 31.6% believed that using public COVID-19-related testing and treatment services could raise questions about an immigrant’s financial standing.
- 20.5% believed that immigration authorities may consider immigrants who have been diagnosed with COVID-19 to be undesirable citizens
- 36.0% believed that immigration officials blame immigrants for COVID-19 and will look for excuses to deny their immigration applications.
- 15.5% agreed that, to avoid government attention, it is better for immigrants not to be tested or treated for COVID-19.

Additional Health Disparities and COVID-19 Testing and Preventative Measures

Public health messaging and technology are other elements that may have widened disparities in accessing and receiving medical care. Easy to understand public health messaging provided in multiple languages is necessary to meet all patients' needs. At Mass General Brigham, 35% of patients hospitalized with COVID-19, do not speak English as their primary language.⁵³ When the pandemic hit, and many health care providers shifted to digital health, low-income communities suffered due to limited broadband access.⁵⁴ In Chelsea, less than 10% of Mass General Brigham teleconsultations were able to be completed using video technology, compared to 50% or more for patients residing in other more affluent Boston area cities.⁵⁵ *[See Demographics for more information.]*

During the pandemic, access to testing for COVID-19 and eventually preventative measures, like the COVID-19 vaccine, were essential to significantly minimizing the spread of the virus. Given the barriers to healthcare access outlined above, Chelsea leaders and health partners needed to go above and beyond with trusted, multilingual information and easily accessible care. In Chelsea, testing ramped up when key stakeholders realized the disease was spreading at outstanding rates.⁵⁶ In an attempt to “Stop the Spread” local healthcare providers, as well as the Commonwealth, offered free COVID-19 tests to those regardless of patient status, health insurance, or immigration status, though fear and mistrust undoubtedly impacted some individuals' decision to get tested or not.⁵⁷

When the vaccine became available, local leaders advocated to set up vaccinations sites throughout Chelsea, and through Governor Baker's distribution plan, Chelsea residents were able to access the vaccine in the early months of 2021. However, there continued to be disparities in vaccine distribution in Massachusetts. When the vaccine was first offered in Massachusetts in January 2021, White residents who were fully vaccinated drastically outnumbered Latinx and Black residents who had been fully vaccinated across the state.⁵⁸ By the end of September 2021, Chelsea successfully fully vaccinated 72.8% of the population and 84.5% of the population have received their first dose.⁵⁹ *[See Chelsea's Collective Response for more information.]*

Access to health and quality of care alone can not drive improvements in people's health outcomes. Inequities within social and economic factors, as well as stark differences within racial and ethnic groups, are drivers of health and must be addressed in order to improve long standing health problems. In the context of COVID-19, these health inequities only worsened, demonstrating the high need for a more equitable healthcare system.

35%

At Mass General Brigham, 35% of patients hospitalized with COVID-19, do not speak English as their primary language.



Dean Xerras, MD, Medical Director MGH Chelsea Healthcare Center, Primary Care Physician

What I saw as a PCP in Chelsea during the pandemic, was the perfect storm of deep rooted fears and mistrust of seeking healthcare in communities of color, in the context of severe baseline chronic illness, with a virus that thrived with social proximity.

So an immigrant in Chelsea, with underlying diabetes and hypertension, who was an essential worker, who could not work from home, who lived in a multigenerational housing environment, was frequently exposed to COVID-19, all day, every day, for months. And we saw worse outcomes when they became sick with COVID-19. And what's more distressing to healthcare workers in these communities, are the repercussions that the pandemic will have on the health status of these communities of color.

There are patients who haven't been seen in the health system in over 2 years because of the pandemic and fear of coming for care during the past 18 months. Patients with diabetes, hypertension and heart disease are returning now, with poorly controlled health indices. Patients have missed



essential cancer screenings and will be diagnosed with advanced cancer that could have been preventable. There will be a lot of "catch up," to close these wide gaps of health inequity. Thankfully, we will rely on our decades long strong relationships with CBOs, faith leaders and city government, to ensure these connections are re-made and trust is maintained, in order to achieve health parity within our communities of color.

Policy Recommendations

- 1. Healthcare, health outreach and public health information must be simultaneously interpreted (verbal) and/or translated (written) into the top 6 languages spoken in Chelsea. Hiring multilingual doctors, nurses, and health center staff should be prioritized. Public health information must be provided in print, audio and video.**
- 2. Financial support should be expanded for Health Navigators and Health Outreach Workers. These frontline health advocates must be multilingual, racially, ethnically, religiously diverse and representative of Chelsea's population.**
- 3. Outreach and enrollment for MassHealth must include clear, easy multilingual information provided in multiple formats (print, verbal, video, etc.). There must be adequate, multilingual staffing. Clarity must be provided around Public Charge.**
- 4. Partnerships between GreenRoots, the City and local health clinics should be supported to "prescribe" indoor air purifiers for patients with asthma, COPD and other chronic respiratory and cardiovascular disease.**

References

1. Walls, C. (2020, June 12). Why Racism, Not Race, is a Risk Factor for Dying of COVID-19. *Scientific American*. Retrieved from <https://www.scientificamerican.com/article/why-racism-not-race-is-a-risk-factor-for-dying-of-covid-19/>
2. Healthline. (2020, November 11). What is the Difference Between Morbidity and Mortality? What are the Most Common Causes of Death in the United States. Retrieved from <https://www.healthline.com/health/morbidity-vs-mortality>
3. Husain, S. (2019, August 15). Ask an Epi: Morbidity v Mortality Rates. *LiveStories*. Retrieved from <https://www.livestories.com/blog/morbidity-vs-mortality-rate>
4. Healthline. (2020, November 11). What is the Difference Between Morbidity and Mortality? What are the Most Common Causes of Death in the United States. Retrieved from <https://www.healthline.com/health/morbidity-vs-mortality>
- 5-6. New York State Department of Health. (n.d.). Basic Statistics: About Incidence, Prevalence, Morbidity, and Mortality - Statistic Teaching Tools. Retrieved from <https://www.health.ny.gov/diseases/chronic/basicstat.htm>
7. Healthline. (2020, November 11). What is the Difference Between Morbidity and Mortality? What are the Most Common Causes of Death in the United States. Retrieved from <https://www.healthline.com/health/morbidity-vs-mortality>
8. Centers for Disease Control and Prevention. (2012, May 18) Lesson 3: Measures of Risk, Section 3: Mortality Frequency Measures. Retrieved from <https://www.cdc.gov/csels/dsepd/ss1978/lesson3/section3.html>
9. Massachusetts General Hospital. (2019). Community Health Needs Assessment Reports. Retrieved from <https://www.massgeneral.org/assets/MGH/pdf/community-health/cchi/20191016-CHNA-report.pdf>
10. MA DPH, Registry of Vital Records and Statistics
- 11-14. Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT)
15. MA DPH, Registry of Vital Records and Statistics
- 16-18. Center for Health Information and Analysis (CHIA) pulled from the MA DPH Public Health Information Tool (PHIT)
19. 2019 North Suffolk Community Health Needs Assessment Community Survey
- 20-21. Massachusetts Center for Health Information and Analysis (CHIA), Massachusetts Registry of Vital Records and Statistics, MDPH
23. Bureau of Infectious Disease and Laboratory Sciences, Massachusetts Department of Public Health
24. Centers for Disease Control and Prevention. (2021, August 20). About Covid-19: People with Certain Medical Conditions. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html>
25. National Institute of Drug Abuse (2020, September 14). Substance Use Disorder Linked to COVID-19 Susceptibilities. Retrieved from <https://www.drugabuse.gov/news-events/news-releases/2020/09/substance-use-disorders-linked-to-covid-19-susceptibility>
26. Centers for Disease Control and Prevention. (2020, October 20). COVID-19 and HIV. Retrieved from <https://www.cdc.gov/hiv/basics/covid-19.html>
27. Martin, L., & Goodwin, M. (2021, July 19). Do People with Hepatitis C Have a Higher Risk of Severe Covid-19. *Medical News Today*. Retrieved from <https://www.medicalnewstoday.com/articles/hepatitis-c-and-covid-19>
- 28-29. Sanyaolu, A., Okorie, C., Marinkovic, A., Patidar, R., Younis, K., Desai, P., Hosein, Z., Padda, I., Mangat, J., & Altaf, M. (2020). Comorbidity and its Impact on Patients with COVID-19. *SN comprehensive clinical medicine*, 1–8. Advance online publication. <https://doi.org/10.1007/s42399-020-00363-4>
30. Tikkanen, R., Osborn, R., Mossialos, E., Djordjevic, A., & Wharton, G.A. (2020, June 5). International Health System Profiles: United States. The Commonwealth Fund. Retrieved from <https://www.commonwealthfund.org/international-health-policy-center/countries/united-states>
31. The Commonwealth of Massachusetts. (n.d.). MassHealth. Retrieved from <https://www.mass.gov/topics/mashealth>
32. Kaiser Family Foundation (2019). Health Insurance Coverage of the Total Population, Multiple Sources of Coverage: Massachusetts. Retrieved from <https://www.kff.org/other/state-indicator/health-insurance-coverage-of-the-total-population-multiple-sources-of-coverage/?currentTimeframe=0&selectedRows=%7B%22states%22:%7B%22massachusetts%22:%7B%7D%7D%7D&sortModel=%7B%22colId%22:%22Non-group%20Only%22,%22sort%22:%22desc%22%7D>
33. Kaiser Family Foundation. (2021, May 10) Status of State Medicaid Expansion Decisions: Interactive Map. Retrieved from <https://www.kff.org/medicaid/issue-brief/status-of-state-medicaid-expansion-decisions-interactive-map/>
- 34-36. Guth, M., Garfield, R., & Rudowitz, R. (2020, May 15). The Effect of Medicaid Expansion under the ACA: Studies from January 2014 to January 2020. Kaiser Family Foundation. Retrieved from <https://www.kff.org/medicaid/report/the-effects-of-medicaid-expansion-under-the-aca-updated-findings-from-a-literature-review/>
- 37-38. TownCharts. (n.d.). Chelsea, Massachusetts Healthcare Data. Retrieved from <https://www.towncharts.com/Massachusetts/Healthcare/Chelsea-city-MA-Healthcare-data.html>
39. Rudowitz, R., Garfield, R., & Hinton, E. (2019, March 6). 10 Things to Know about Medicaid: Setting the Facts. Kaiser Family Foundation. Retrieved from <https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-medicaid-setting-the-facts-straight/>

- 40-41. TownCharts. (n.d.). Chelsea, Massachusetts Healthcare Data. Retrieved from <https://www.towncharts.com/Massachusetts/Healthcare/Chelsea-city-MA-Healthcare-data.html>
42. King, J.S. (2020, June 25). COVID-19 and the Need for Health Care Reform. *New England Journal of Medicine* 2020; 382:e104. DOI: 10.1056/NEJMp2000821
43. Hamel, L., Muñana, C., & Brodie, M. (2019). Kaiser Family Foundation / LA Times Survey of Adults with Employer-Sponsored Health Insurance. Kaiser Family Foundation. Retrieved from <https://files.kff.org/attachment/Report-KFF-LA-Times-Survey-of-Adults-with-Employer-Sponsored-Health-Insurance>
44. Ndugga, N. & Artiga, A. (2021, May 11). Disparities in Health and Health Care: 5 Key Questions and Answers. Kaiser Family Foundation. Retrieved from <https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/>
- 45-46. Tolbert, J., Orgera, K., & Damico, A. (2020, November 6). Key Facts About Uninsured People. Kaiser Family Foundation. Retrieved from <https://www.kff.org/uninsured/issue-brief/key-facts-about-the-uninsured-population/>
47. Artiga, S., Tolbert, J., & Orgera, K. (2020, November 6). Hispanic People are Facing Widening Gaps in Health Coverage. Kaiser Family Foundation. Retrieved from <https://www.kff.org/policy-watch/hispanic-people-facing-widening-gaps-health-coverage/>
48. Ndugga, N. & Artiga, A. (2021, May 11). Disparities in Health and Health Care: 5 Key Questions and Answers. Kaiser Family Foundation. Retrieved from <https://www.kff.org/racial-equity-and-health-policy/issue-brief/disparities-in-health-and-health-care-5-key-question-and-answers/>
49. Artiga, S., Tolbert, J., & Orgera, K. (2020, November 6). Hispanic People are Facing Widening Gaps in Health Coverage. Kaiser Family Foundation. Retrieved from <https://www.kff.org/policy-watch/hispanic-people-facing-widening-gaps-health-coverage/>
50. Sequist, T.D. (2020, July 6). The Disproportionate Impact of COVID-19 on Communities of Color. *Nejm Catalyst*. Retrieved from <https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0370>
51. 2019 North Suffolk Community Health Needs Assessment Community Survey
52. Galletly, C.L., Lechuga, J., Dickson-Gomez, J.B., Glasman, L.R. McAuliffe, & Espinoza-Madrigal, I. (2021, July 19). Assessment of COVID-19 Related Immigration Concerns amongst Latinx Immigrants in the US. *JAMA Network Open*. 2021;4(7):e2117049. doi:10.1001/jamanetworkopen.2021.17049
- 53-55. Sequist, T.D. (2020, July 6). The Disproportionate Impact of COVID-19 on Communities of Color. *Nejm Catalyst*. Retrieved from <https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0370>
56. Boston Indicators. (2020, August 20). COVID-19's Disparate Impact on Low-income Communities of Color. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/august/equity-brief
57. Melnik, M., & Raisz, A.. (2020, December 18). Across Two Waves: COVID-19 Disparities in Massachusetts. Boston Indicators. Retrieved from https://www.bostonindicators.org/reports/report-website-pages/covid_indicators-x2/2020/december/persisting-covid-disparities.
58. Massachusetts Department of Public Health. (2021, January 28). Weekly COVID-19 Vaccination Report. Retrieved from <https://www.mass.gov/doc/weekly-covid-19-vaccination-report-january-28-2021/download>
59. Massachusetts Department of Public Health. (n.d.). COVID-19 Vaccine Equity Initiative Data Dashboard. The Commonwealth of Massachusetts. Retrieved from <https://www.mass.gov/info-details/covid-19-vaccine-equity-initiative-community-specific-vaccination-data# covid-19-vaccine-equity-initiative-data-dashboard->

Chelsea's Collective Response



75

The Chelsea Pandemic Response Team grew to include approximately 75 stakeholders and 10 different working groups, many of whom continue to meet months later.

As an entire community, Chelsea's response to the pandemic was (and still is) heroic, while our fellow residents' pandemic-related needs have been substantial. City officials, medical professionals, nonprofit agency staff, faith-based leaders, multilingual interpreters, school administrators, and countless resident volunteers with big hearts all worked together—and continue to do so. This collective effort represents the best of Chelsea; and should serve as a national model of community-led emergency response.

The pandemic highlighted for Chelsea, once again, that we are better together.

THE CHELSEA PANDEMIC RESPONSE TEAM

- Elected and appointed city officials and employees
- Community-based organizations
- Faith-based leaders
- Business representatives
- School leaders
- Resident volunteers
- MGH Chelsea HealthCare Center and Beth Israel Deaconess Medical Center
- City Manager
- State elected officials

CHELSEA PANDEMIC RESPONSE WORKING GROUPS

- Health Updates/Education
- Mental Health/Trauma
- Wellness/Neighbor Check-ins
- Communications
- Diversions/Activities
- Financial Impacts
- Housing/Quarantine
- Elders
- Food Assistance
- Faith Communities
- An ad hoc supplies committee

Kevin Tabb, MD, President & CEO Beth Israel Lahey Health

The COVID-19 pandemic has disproportionately impacted low-income, Black and Latinx communities, including the City of Chelsea, and underscored the urgency of addressing systemic health and social inequities. As an organization committed to serving the vital health care needs of our communities, we are proud to partner with the City of Chelsea and GreenRoots to help address significant and emerging needs that have been exacerbated by the pandemic.

Very early on, Chelsea, Massachusetts got slammed by COVID-19; and the impacts continue more than eighteen months after the first infection in our community. We know that the social determinants of health played a significant role in how residents were quickly infected and why infections were severe. While this report provides an in-depth understanding of how these intersecting social determinants affected our community, there is another equally critical story.

The pandemic highlighted for Chelsea, once again, that we are better together.

Joint Community Response

On March 11, 2020, GreenRoots held an initial call with numerous community leaders to discuss how to best prepare the community for what was then projected to be a 2-week shutdown due to COVID-19. These stakeholders agreed to daily calls as the situation was so fluid; and together, each person invited others to join. That call launched what became The Chelsea Pandemic Response Team, which met daily (including weekends) at 4pm via a conference call line, with one static number secured by GreenRoots. The City of Chelsea agreed to facilitate this daily call and support the expansion of its membership and its working groups. Over time, the group grew to include approximately 75 stakeholders and 10 different working groups, many of whom continue to meet months later.

The Chelsea Pandemic Response Team was composed of elected and appointed city officials and employees, community-based organizations, faith-based leaders, health institutions, business representatives, school leaders and resident volunteers who worked together to collectively address the serious and immediate challenges facing Chelsea. It was not uncommon for the heads of the two health clinics, MGH Chelsea HealthCare Center and Beth Israel Deaconess Medical Center, to be on the call; the City Manager rarely, if ever, missed a call; and state elected officials also participated on occasion and shared updates and actions from the state government. These daily calls lasted months and the systems established in those early days continue today, well over a year into the pandemic. This coordinated, thoughtful, joint effort moved mountains.

There were a number of early actions which launched Chelsea into being able to fully respond to the needs of the community. In early April, GreenRoots, elected officials, City Leaders and partners at the Boston University School of Public Health convened medical officials and City leaders to address rapidly rising infection rates. This group decided to bring these concerns to the State's immediate attention through a joint letter highlighting Chelsea's significantly higher infection rates (compared to the county and state rates) and requesting greater governmental assistance. Forty-seven community leaders, including the President and CEO of Massachusetts

General Hospital and Beth Israel Lahey Health, respectively, academic and research partners and elected officials signed the letter. Folks on the ground strongly believe this advocacy tool helped to catapult significant investments in Chelsea including: increased free COVID-19 testing (which continues today); increased food distribution capabilities; National Guard assistance; and support for Chelsea's quarantine hotel.

Meeting Health Needs

Addressing the immediate health care needs of Chelsea residents was first and foremost. Chelsea is fortunate to have two major healthcare institutions providing care in our community: Massachusetts General Hospital's Chelsea HealthCare Center and Beth Israel Deaconess Medical Center (part of Beth Israel Lahey). These health centers provided free testing, supported antibody research, shared up-to-the-moment, multilingual information and resources. Moreover, the leaders at both institutions cleared misinformation, fostered deep community connections, built trust and served as first responders for community members who contracted COVID-19. In addition to their world-renowned care, many additional community efforts supplemented health needs.

The City and its partners invested considerable resources in a quarantine hotel. The City of Chelsea partnered with other nearby communities to provide safe, healthy and comfortable shelter for individuals and families who needed to quarantine to keep other family members and housemates free from infection. To do so, they rented an entire hotel, with capacity for 150 patients, who were provided onsite care by physicians and nurses staffed by Massachusetts General Hospital (MGH). The patients received meals and wifi access and were allowed to bring children with them. There was no cost to the infected person(s) and immigration status was never questioned. Community partners, such as La Colaborativa, supported the hotel with deliveries of Mother's Day brunch and presents, diapers and toys for children. The City also rented and managed an apartment building where larger families could quarantine and/or isolate safely.

- The City of Chelsea provided free transportation, via Cataldo Ambulance, to the quarantine hotel.
- The City of Chelsea coordinated with North Suffolk Mental Health to offer mental and behavioral healthcare services to residents undergoing isolation and quarantine in the two isolation housing facilities.
- Health Innovations conducted daily testing throughout the pandemic. There were two testing sites throughout 2020, and one is still running throughout 2021. Testing was free of charge, no questions asked, no immigration status questions and open even during extreme weather.
- MGH's mobile testing van conducted testing at public locations, community events, and at congregate housing.
- Beth Israel Deaconess Medical Center also provided daily drive through testing alongside their health facility on Broadway.

HEALTHCARE ACTIONS

- Quarantine hotel
- Mental and behavioral healthcare services
- Daily testing
- Mobile testing van
- Nurse support calls to households in isolation with positive COVID-19 tests
- Waste water sampling
- Ongoing community crisis intervention support





18 months

Chelsea Public Schools in collaboration with Aramark provided to-go breakfasts and lunches for eighteen straight months.

- To monitor the well-being of those testing positive for COVID-19, a team of nurses commissioned by the City of Chelsea, as well as health staff from MGH, Cambridge Health Alliance, and Everett Hospital made outgoing calls to thousands of households. These health professionals provided guidance and support while answering questions and concerns. Subsequently, the City's 311 staff and the Pandemic Response wellness teams fulfilled requests for masks, cleaning supplies, thermometers, food assistance, diapers and more.
- The City, in partnership with MIT and the Metropolitan Area Planning Council, oversaw waste water sampling, monitoring, and reporting, in collaboration with BioBot, to identify COVID-19 outbreaks, clusters, and patterns of transmission in neighborhoods.
- MGH's Healthy Chelsea Coalition led the mental health/trauma working group (of the Chelsea Pandemic Response Team) together with North Suffolk Mental Health, GreenRoots' Health Equity Corps, Chelsea Public Schools, Department of Children & Families, and Chelsea Community Connections to provide connectivity to mental health professionals, workshops, trainings and wellness activities to deal with the increase in mental health concerns throughout the pandemic. That committee continues to meet on a bi-weekly basis.

Communications

Communication was, and continues to be, a critical piece of this joint response. City Hall, MGH Chelsea HealthCare Center and multiple community nonprofits and other health partners provided daily English/Spanish updates through multiple platforms including written flyers and notices, videos, social media, texts and in-person communications. Multiple social media sites played a key role in information sharing. These sites include the City of Chelsea's and other community based organization's Facebook pages and Chelsea En Espanol Facebook page. Critical public health and resource information was provided in these daily updates. GreenRoots led an effort to translate some of the most important and necessary information into eight frequently spoken languages in Chelsea. We did so by engaging community leaders and paying them a stipend for their translation services.

MGH provided regular, critically important information in multiple languages through several platforms and with many trusted health and community leaders. In addition, the City and local nonprofits hosted numerous health information sessions—through videos and panel discussions. Beth Israel Deaconess Medical Center also was a critical communications partner.

Furthermore, one of the most important aspects of communications, combined with advocacy, was the collective effort to press the State to share information on infection rates. For weeks on end, Chelsea leaders relied on the select few who could access information on rates. Serious and time consuming analysis was required to determine Chelsea's per capita rates and for comparison with other communities. Collective advocacy resulted in the State eventually making this data public and widely accessible.

Food Assistance

One of the first crises we witnessed, as Chelsea dealt with the blows of the pandemic, was rampant food insecurity. The food assistance working group, led by the Chelsea Hunger Network in collaboration with the Healthy Chelsea Coalition, jumped into immediate action and their work continues today. The ongoing response to dire food insecurity in Chelsea has been tremendous. Generous donations and committed community leaders have made, and continue to make, a remarkable difference in addressing widespread food insecurity.

- Truckloads of food were donated to food pantries and directly to individuals in Chelsea. Much of this food came from local Chelsea businesses, including many at the New England Produce Center.
- Early in the pandemic, La Colaborativa began offering donated food from the front porch of the Executive Director's home. That initiated what grew into a local food pantry serving thousands of people weekly, and now includes deliveries in multiple communities. This critical, trusted service continues today.
- The City of Chelsea established its Emergency Food Distribution Hub, first at PORT Park, and subsequently at the former Sea-lect Building. GreenRoots fostered the establishment and expansion of this HUB with Eastern Minerals, the property owners. GreenRoots also supported the City's Emergency Food Distribution Hub with contracted workers, the purchase of supplies including boxes and food, and provided other necessary services.
- Since its inception, the City of Chelsea's Emergency Food Distribution Hub has distributed approximately 300,000 boxes of food either directly to Chelsea families, at its pop-up pantries, or indirectly to pop-up pantries organized by other non-profit and faith-based institutions.
- The City also helped to support families in quarantine by delivering over 11,000 boxes of food to individual homes.
- Chelsea Public Schools (CPS) in collaboration with the CPS school food provider, Aramark, immediately moved all school meals (that would be offered in-school) outdoors for limited contact pick-ups. To-go breakfasts and lunches were provided for eighteen straight months, through extreme cold and hot temperatures.
- Local food pantries, all part of the Chelsea Hunger Network (that had been tirelessly meeting daily and then weekly during the pandemic) including the Salvation Army, St. Luke's, Revival International food pantry and Luz de Cristo, all significantly increased their efforts—in some cases, quadrupling their distribution volumes. Several new pop-up food pantries and food distribution locations were established, including at Temple Emmanuel. Many of these efforts continue today.



The ongoing response to dire food insecurity in Chelsea has been tremendous. Generous donations and committed community leaders have made, and continue to make, a remarkable difference in addressing widespread food insecurity.

5,000lbs.

Chelsea's Urban Farm provided ~5,000 pounds of fresh, locally-grown produce between 2020-2021 to Revival International's food pantry.

\$6.3M

The Chelsea Eats Debit Card Program has distributed \$6.3M to food-insecure families allowing for greater dignity and the ability to purchase the types of food they want and need.

- The City of Chelsea facilitated the Free Meals for Kids, with support from the YMCA of Greater Boston, Stockpot Malden and the Shah Family Foundation, which provided healthy, prepared meals to thousands of families weekly at their five distribution locations.
- The Senior Center facilitated weekly deliveries of food to homebound and/or vulnerable members of Chelsea's aging population.
- GreenRoots facilitated the provision of fresh, locally-grown vegetables and herbs to augment offerings at food pantries. Chelsea's Urban Farm provided ~5,000 pounds of produce between 2020-2021 to Revival International's food pantry and Gaining Ground Farm provided ~25,000 pounds of local produce to Salvation Army's Food Pantry.
- The City of Chelsea, with support from the Shah Family Foundation, United Way, MGH and other benefactors, established the Chelsea Eats Debit Card Program. This card provides approximately 2,000 Chelsea families with over nine months of cash assistance to use wherever Visa is accepted. Over \$6.3M has been distributed to these families. The intent of this program was to provide greater dignity to food insecure families while allowing them to purchase the types of food they need and want.
- In addition to staying connected with families during the pandemic, the Jordan Boys and Girls Club in Chelsea provided hot meals to Club members and often offered boxes of food and other resources.
- Families of children in schools where meals would have been offered free, as is the case in Chelsea Public Schools, received assistance known as the Pandemic-EBT (P-EBT), which was loaded with the approximate benefit of the meals each student would have received had they been in the school buildings. This resource was provided by the federal government and allowed families to use those dollars in grocery stores that accept SNAP benefits.
- In an effort to close the SNAP Gap (the number of people who are eligible to receive SNAP benefits but don't enroll), GreenRoots' Health Equity Corps (HEC) collaborated with other community partners to reach out to Chelsea residents via text and phone calls to assist them in getting connected to a service provider who could help determine eligibility and enroll them in SNAP. HEC has reached out to 2,500 individuals.



Critical Resources

Matching residents in need of critical resources has been another collaborative effort and one that was shared among partnering organizations. This required multilingual tracking of resident needs, resources available, and delivery capabilities.

- The City implemented and staffed a multilingual 3-1-1 information line to match residents to resources. During the height of the pandemic, this line operated 12 hours per day, 7 days per week with four multilingual operators.
- Early in the pandemic, when masks were hard to come by, the City, together with community and business partners, led intensive efforts to get handmade masks to Chelsea residents. The City coordinated donations of fabric, contracted with seamstresses and fostered collaboration with networks of volunteers to sew these masks. Over 8,000 handmade masks were created and distributed. Others also contributed towards donated masks including La Colaborativa, MGH and Chelsea Rotary Club members.
- The Neighborhood Wellness team, a working group developed through the Chelsea Pandemic Response team and led by GreenRoots, developed a neighborhood pod system. This system identified neighborhood captains who would check in with their neighbors and work to match residents with necessary resources. This team resulted in grocery deliveries, laundry assistance, mask and thermometer deliveries and more. The team still meets today on a monthly basis.
- Diaper and clothing drives by area businesses and community groups, including Chelsea Community Connections, La Colaborativa, ROCA, St. Luke's and more, met the urgent need of families with nearly \$100K in diapers and formula for our youngest residents in need. Coordinated by the Chelsea Community Connections and the City of Chelsea, volunteers deployed these resources through a network of community hubs and delivered them directly to homes.
- There was great collaboration and resource sharing among organizations. For example, GreenRoots procured the donation of diapers, hygiene kits and other personal protective equipment (PPE) and shared those resources with Chelsea Community Connections and partner organizations in nearby communities. Similarly, CAPIC shared financial resources (gift cards) with Chelsea Community Connections to assist their network of families in need.
- GreenRoots' Health Equity Corps (HEC) distributed thousands of PPE kits, made possible through state donations, Health Resources in Action, MGH and other grant funding. These kits included masks, hand sanitizer, disinfecting wipes, thermometers, batteries and more. The City also led efforts to get hand sanitizer, thermometers and other necessities to families in need, including to those in quarantine; many days included more than 100 deliveries made to individuals in quarantine. Multiple healthcare companies also donated PPE that was distributed throughout Chelsea.
- Chelsea Public Schools distributed Chromebooks for all students. GreenRoots provided technical support, including laptops and wifi boosters, for the youth who worked as part of the Environmental Chelsea Organizers (ECO) youth crew.
- Dozens of big-hearted people drove all kinds of resources all over the city to residents in need.

CRITICAL RESOURCES

- Handmade masks
- Grocery deliveries
- Laundry assistance
- Diapers
- Formula
- Clothing drives
- PPE kits
- Chromebooks



Dozens of big-hearted people drove all kinds of resources all over the city to residents in need.

\$1.4M

GreenRoots, the City of Chelsea, La Colaborativa, The Neighborhood Developers (and later CAPIC) came together to create the One Chelsea Fund, with the support of the United Way. More than \$1.4 million was raised and distributed.

Financial Assistance

Financial assistance for vulnerable residents was another significant piece of the community's collective response. Multiple efforts have resulted in various forms of financial support for residents in need.

- Utilizing a model highlighted by the Climate Justice Alliance, GreenRoots, the City of Chelsea, La Colaborativa, The Neighborhood Developers (and later CAPIC) came together to create the One Chelsea Fund, with the support of the United Way. The 3 nonprofits created an application form and a database system to track residents requesting financial assistance; immigration status was not requested. All the partners jointly fundraised for the One Chelsea Fund. All incoming donations were managed by the United Way, divided between the nonprofits, and delivered to residents in the form of checks. Neither the organizations, nor the recipients were charged any fees by the hosting financial institution, Chelsea Bank, a division of East Cambridge Savings Bank. Recipients were not required to have a bank account at the bank; and recipients could use any form of identification, including passports from a country other than the United States. More than \$1.4 million was raised and distributed.
- Other cash assistance programs, not highly publicized, were utilized to assist the most devastated families. CAPIC, La Colaborativa, TND and GreenRoots all had different grant funding, including from Beth Israel Lahey, that was utilized solely to benefit impacted residents. Some of these funding sources were specifically for undocumented families. Partnering organizations such as, Centro Presente, also distributed tens of thousands of dollars to help impacted immigrant families.
- The City of Chelsea invested considerable resources in supporting the small business community. In addition to financial resources, the City assisted restaurants with outdoor seating, and being creative with marketing and sales of merchandise to ensure our small business community wasn't shattered by the economic fallout caused by the pandemic.
- Father Edgar of St Luke's Church established the Chelsea Funeral Fund, with funding from the City and donations directed by GreenRoots, which provides for cremation and interment of impoverished residents. To date, \$55,000 has been raised, and 21 families have received assistance.

- The City, in an effort to help residents save precious financial resources, allowed residents to not pay water, parking, taxes and other bills until July 2020. No late fees were incurred during this time.
- HarborCOV, an organization dedicated to addressing domestic violence, has provided financial assistance to survivors of domestic violence, for a range of pandemic-related costs like hotels, housing, food, medication and technology for hundreds of families to keep them as safe, healthy and as connected as possible.

Maribel

The city did help people. They organized food, and stuff. Maybe, that's why I am here- because I know that everybody has their different culture and helps everybody. Everybody helps everybody. I think it's good for me. I'm happy to live here. I wouldn't choose to live anywhere else.

Housing security

Yet another critical piece of the Chelsea community response has been around housing—keeping vulnerable residents safely housed. Nonprofits like The Neighborhood Developers, La Colaborativa and CAPIC have all provided critical services, with support from both the City and State.

- The City implemented the Emergency Rental Assistance Program, which served approximately 560 households with direct funding for rent and utilities, and the Homeowner Stabilization Program which served approximately 70 low- and moderate-income homeowners with direct funding for mortgage, insurance, and property tax expenses, as well as foreclosure prevention services. The City's first round of rental assistance totalled \$1.25M, funded by Community Preservation Act funds; and the second round of funding was populated by Federal CARES Act dollars. The Chelsea City Council subsequently appropriated an additional \$750,000 for the Homeowners Stabilization Program which continues today.
- The City developed and oversaw an emergency housing program to serve evicted and unhoused residents, consisting of an emergency shelter, in the form of furnished apartments, and a range of case management and wrap-around services. This system predominantly assisted households that were ineligible for state and federal resources, due to immigration status.
- The City provided funding to hire four (4) RAFT housing staff at The Neighborhood Developers to assist residents with navigating the RAFT application process, and a dedicated financial specialist at Metro Housing Boston to serve Chelsea applicants. Subsequently, the City expanded funding to hire one (1) additional RAFT housing specialist at La Colaborativa. These resources help to increase the amount of RAFT funding made available to residents, while contributing to decreased application processing time. The \$20,000 per month in City funds invested in this program leveraged another \$280,000 per month in rental and mortgage assistance for Chelsea residents.
- The City, La Colaborativa, and Housing Families formed a local Rapid Rehousing Program to rehouse displaced residents, defray move-in costs, and provide ongoing post-housing case management services.
- The Neighborhood Developers and La Colaborativa completed 655 applications for RAFT (rental assistance) totaling \$5M. These funds help renters and homeowners who are in arrears to get back on their feet.
- Multiple nonprofits, together with the City, came together to create an Eviction Task Force, dedicated to preventing resident evictions through information sharing and direct service provision.
- The City of Chelsea supported the creation of the Chelsea Legal Clinic, established to provide legal services to Chelsea residents facing eviction.

HOUSING RESOURCES

- Advocacy for Eviction Moratorium
- Emergency Rental Assistance Program
- Homeowner Stabilization Program
- Emergency shelter
- Rapid Rehousing Program
- Applications for RAFT
- Eviction Task Force
- Chelsea Legal Clinic
- Emergency housing assistance
- Dedicated rental assistance
- Chelsea's Anti-Displacement Roundtable

560

The City implemented the Emergency Rental Assistance Program, which served approximately 560 households with direct funding for rent and utilities.



Bernabe, 311 Manager, Chelsea City Hall



Thomas G. Ambrosino, City Manager, City of Chelsea

Perhaps a lone bright spot in this awful pandemic was the way the people of Chelsea rallied together to minimize the impacts of this virus. City employees, non-profit organizations and neighborhood residents joined forces and collaborated in myriad ways to help the most vulnerable. It made me proud to be City Manager.

\$5M

The Neighborhood Developers and La Colaborativa completed 655 applications for RAFT (rental assistance) totaling \$5M.

- CAPIC has provided emergency housing assistance to hundreds of Chelsea residents. These services include case management, cash to help pay owed rent and/or while the tenant awaits RAFT assistance and, in some of the most dire circumstances, to pay for hotel stays post-eviction. La Colaborativa also provided hotel vouchers when needed.
- ROCA organized, engaged, and aided young mothers and formerly incarcerated young adults with a variety of services, including dedicated rental assistance, case management services, and mental healthcare.
- GreenRoots, pre-pandemic, established Chelsea's Anti-Displacement Roundtable, a coalition of partners working to prevent the displacement of our residents and our neighborhoods through rising housing costs. The pandemic exacerbated displacement through owed rent and pressure from landlords. Together, the Anti-Displacement Roundtable advocated for the statewide eviction moratorium, attention from the Governor and the MA Department of Housing and Community Development to address housing insecurity in Chelsea and for additional support through the American Rescue Plan Act (ARPA) funds.

Economic Stabilization

As the economy closed down, the City, Chelsea Business Foundation, and Chelsea Chamber of Commerce worked with businesses to employ new health & safety measures, adapt to changing restrictions, and access state and federal small business resources.

- The City, in partnership with the Chelsea Business Foundation, disbursed \$1M in funding to small businesses for rent, payroll, and operations.
- La Colaborativa led organizing and public outcry to call attention to inadequate Federal funding from CARES and ARPA, based on the Community Development Block Grant (CDBG) funding formula. Together with the Anti-Displacement Roundtable members these combined efforts resulted in an additional \$28M allocated by Governor Baker for Chelsea. These funds were meant to make up for the fact that Chelsea is not a HUD entitlement community.
- La Colaborativa and TND worked with residents to access cash benefits and apply for unemployment benefits.

- Under the Good Jobs Coalition, the City, Metro North Workforce Board, Mass Hire, The Neighborhood Developers, and La Colaborativa established an employment recovery program to connect residents with job opportunities and different types of training.
- The Good Jobs Coalition established a flexible fund for residents to access resources for obtaining new living wage jobs, such as transportation stipends.
- La Colaborativa expanded workforce development services to assist the growing number of residents seeking employment in living wage sectors.
- The City financed the first phase of a comprehensive childcare initiative, as childcare capacity dwindled. This included partnering with CAPIC and For Kids Only to modify facilities, adopt best practices, and lower the costs of childcare; partnering with Chelsea Community Connections to provide direct family support; and collaborating with Bunker Hill Community College to establish a free childcare training and economic development program for residents interested in starting their own childcare business in Chelsea.
- The City, The Neighborhood Developers, and La Colaborativa expanded digital literacy initiatives—online ESOL, computer and technology training.
- The City also partnered with ROADS Consulting Group to provide one on one technical assistance to entrepreneurs and small businesses to produce and implement recovery plans.

\$1M

The City, in partnership with the Chelsea Business Foundation, disbursed \$1M in funding to small businesses for rent, payroll, and operations.

Systemic Racism

While residents in Chelsea, and other low-income communities of color, knew of the role systemic racism plays in increased morbidity and mortality in Black, Brown, Indigenous and Immigrant communities, the COVID-19 pandemic has publicly demonstrated just that. Moreover, the world saw how these systems play out in everyday life with the death of George Floyd on video for the world to see. The Chelsea Black Community and the Chelsea Young Adult Alliance organized Black Lives Matter protests and marches and led a citywide effort to have racism declared a public health emergency. Their successful work led, among other things, to a new Diversity, Equity and Inclusion position within the City. That position complemented one already in the works through Chelsea Public Schools.



72.8%

As of September 28th, 72.8% of Chelsea was fully vaccinated and 84.5% received their first dose.

75%

There is a high vaccine acceptance rate among youth: of those ages 16 to 19 in the Chelsea schools, 75% are fully vaccinated and 95% have received their first dose.

95%

95% of those between 65 and 75 are fully vaccinated.

18K

3.9K

Vaccine Ambassadors and Promotores de Salud knocked on 18,000 doors and made 3,900 informational calls to residents to get Chelsea to reach our vaccination goals.

Vaccination efforts

All of the aforementioned collective action set the stage for immediate readiness when the vaccines became available. Collective efforts have led to Chelsea's high vaccination rates. As of September 28th, 72.8% of Chelsea was fully vaccinated and 84.5% received their first dose. Of importance to note is the high vaccine acceptance rate among youth: of those ages 16 to 19 in the Chelsea schools, 75% are fully vaccinated and 95% have received their first dose. Of those, school-enrolled ages 12 to 15, 65% are fully vaccinated, 85% have received their first dose. Likewise for seniors, 95% of those between 65 and 75 are fully vaccinated.

- The City of Chelsea worked quickly with health institutions to ensure vaccines were readily available for Chelsea residents. Home visits were made to vulnerable residents and pop-up clinics in low-income and senior housing made the vaccines much more accessible.
- East Boston Neighborhood Health Center opened its vaccine distribution clinic at La Colaborativa's Broadway offices.
- Beth Israel Deaconess Medical Center opened their vaccine clinic in a vacant storefront in the Chelsea Commons commercial center, on a bus route, near public housing and in an area with ample parking; and MGH provided vaccines to their patients at the MGH Chelsea HealthCare Center.
- Vaccine equity initiatives quickly took hold and clinics were held weekly at the Chelsea Senior Center and at different public locations throughout the city.
- Mobile vaccination vans operated through MGH, MassCon, and Cataldo. This included mobile vaccinations at community events, local churches, and at the Senior Center.
- Market Basket hosted 5 vaccination clinics on site.
- GreenRoots' and Chelsea Black Community's Vaccine Ambassadors and La Colaborativa's Promotores de Salud began extensive outreach to bring trusted, multilingual information to residents concerned about the vaccine while also helping with vaccine appointments, locations of vaccination sites and more. Together, these ambassadors and promotores, who are multilingual, multiracial and intergenerational Chelsea residents, knocked on 18,000 doors and made 3,900 informational calls to residents to get Chelsea to reach our vaccination goals.

Miscellaneous efforts

The Pandemic Response Team's Diversions / Activities working group organized numerous socially distant events to help homebound families stay engaged, active and entertained. These activities included scavenger hunts, teddy bear parades, wellness activities, socially distant craft making kits provided by the Chelsea Public Library (CPL), and more. CPL also provided its services in a socially distant way to ensure Chelsea's literacy was not lost due to the forced stay-at-home orders.

Temple Emmanuel provided its side yard and indoor functional hall space to provide support for community services. They co-hosted, with community partners, city-wide events as well as food distribution.

Persistence & Resilience

While this is a comprehensive outline of Chelsea's collective response, it is impossible to document all of the work that hundreds of people carried out, and continue to carry out, over the course of the last 18 months. Despite the challenges we face in Chelsea, as seen through the myriad social determinants of health outlined in this report, Chelsea has shown itself time and time again to be an utterly persistent, resilient community. GreenRoots is grateful for our partners, allies and friends who have shed blood, sweat and so many tears through one of the most grueling periods in our recent history; but, we are even more grateful for the strength, dignity and compassion of our fellow community members. Together, we will rise like a phoenix from the ashes to a stronger and healthier future for Chelsea.

Acknowledgements:

Deep, heartfelt gratitude goes out to our community leaders who shared their personal stories and experiences, offered their photos and their persistence to show how Chelsea is stronger together.

Many community leaders shared their expertise with us. Our thanks go out to the following for their knowledge and insight:

Leslie Aldrich, Executive Director, Massachusetts General Hospital Center for Community Health Improvement

Thomas G. Ambrosino, City Manager, City of Chelsea

Karl Allen, Economic Development Planner, City of Chelsea

Eugene Benson, Environmental Land Use Lawyer and Educator

Cara Cogliano, Director, Chelsea Community Connections Coalition

Patricia Fabian, Associate Professor of Environmental Health, Boston University School of Public Health

Ron Fishman, Community Coordinator, Healthy Chelsea

Mimi Graney, Civic Design & Engagement Strategist, City of Chelsea

Kristi Kienholz, Kienholz Communications

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Danelle Marable, Director of Data and Evaluation, Community Initiatives, Beth Israel Lahey Health

Rafael Mares, Executive Director, The Neighborhood Developers

Norma Milligan, Community Capacity Associate, The Greater Boston Food Bank

Patricia Montes, Executive Director, Centro Presente

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Madeleine Scammell, Associate Professor of Environmental Health, Boston University School of Public Health

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Kelly Washburn, Director of Evaluation, Massachusetts General Hospital Center for Community Health Improvement

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Priyanka Rangadass
Health Equity Corps Research Organizer

Priyanka holds a Bachelor of Science in Health: Science, Society, and Policy from Brandeis University. After graduating in 2019, Priyanka committed to an Americorps year of service with FoodCorps and served the Chelsea community through nutrition, food, and garden lessons and worked to combat food insecurity in the city. Priyanka has a passion and interest in health equity, the social determinants of health and building community. Priyanka joined GreenRoots during the pandemic to provide critical resources and information to the community of Chelsea. Writing this report has solidified Priyanka's commitment to work towards improved public health and health equity.



Leslie Dominguez-Santos
Director of Development

Leslie holds a Bachelors from Oberlin College and a Masters in Social Work from Boston College School of Social Work with a focus in Community Organizing, Policy, Planning and Administration. Leslie served in the Peace Corps in the Dominican Republic and worked as the Director of the Community Building Institute at La Colaborativa (former Chelsea Collaborative) before becoming the Associate Director of Policy, Mid-America Institute on Poverty at Heartland Alliance for Human Needs & Human Rights. She joined GreenRoots in 2018 where she helped the organization to grow its philanthropic support to advance the organization's critical mission. Leslie has written numerous policy briefs; co-authored reports on poverty in America; co-created state housing, anti-poverty and anti-trafficking legislation; and authored articles for multiple media outlets. She has served on Boards of Directors for social justice organizations, and received awards for her advocacy efforts.

WITH
Roseann Bongiovanni, Executive Director
Eva King, GreenRoots Intern
Giselle Barahona, GreenRoots Intern

As with all GreenRoots' work, this report was a collective effort. Every member of the GreenRoots team contributed their passion and experience. Many shared research, made important community connections, conducted interviews, and edited drafts. An enormous thanks goes out to each member of our team for their contributions.

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