

# Air Conditioning, Heat Vulnerability, and Racial Equity

## Introduction

Over five July days, the 1995 Chicago heat wave killed 739 people, most of whom were elderly, poor, and/or Black<sup>i</sup>. 75% of those who died lacked air-conditioning<sup>ii</sup>. Twenty-five years later, heat waves have nearly doubled in frequency<sup>iii</sup>, a different pandemic has arrived in the form of Covid-19, and again, the same poor, elderly, and Black residents are left to suffer the most. Studies of cities across the country, from Berkeley, California to Richmond, Virginia<sup>iv</sup>, have found that households of color are more likely to live in the hottest parts of the city – the result of decades of discrimination in housing policies.

Today, in nearly every city in the country, air conditioning is not considered an essential service. This is not for lack of legislative ability – local ordinances require building owners to provide and maintain many other essential services, such as sewage or hot and potable water, but not air conditioning. The U.S. Department of Housing & Urban Development (HUD), which funds millions of affordable housing units, does not require Public Housing Authorities (PHA) to provide air conditioning and explicitly forbids PHAs from including the costs of running air conditioning in the calculation of a tenant’s utility allowance<sup>v</sup>.

Cities across the country are grappling with the challenges posed by not including air conditioning as a required essential service to be provided by landlords, especially in public housing properties:

- **San Antonio, TX 2019:** “Sweltering in Place. 100-plus highs are common in San Antonio. Yet there's no beating the heat in the 40% of public housing units without AC. A lawmaker and a philanthropist say that's got to change.”<sup>vi</sup>”
- **Fayetteville, AR 2018:** “HUD: AC not a public housing requirement”<sup>vii</sup>”
- **New York, NY 2016:** “Without AC, Public Housing Residents Swelter Through the Summer”<sup>viii</sup>”
- **Ann Arbor, MI 2012:** “Public housing struggles: Lack of air conditioning among problems cited by Ann Arbor Housing Commission”<sup>ix</sup>”

## Evidence Base

Studies of the 1995 Chicago heat wave identified the leading predictors of death as 1) a lack of access to air-conditioning, 2) having medical vulnerabilities (e.g. bed-ridden), and 3) social isolation and/or lack of transportation ability<sup>x</sup>. These predictors did not have to be causal – the 739 deaths were not ‘inevitable’ or ‘natural.’ Instead, they were the products of decades of disinvestment in public services, a lack of local government response to early warning signs, and the heightened vulnerability of isolated seniors forced to choose between their fears of leaving their home due to neighborhood violence and not having air-conditioning to keep them alive inside<sup>xi</sup>.

Studies of other heat waves around the country have similar findings, especially in identifying the lack of AC units as a leading predictor of heat-related health impacts<sup>xii xiii xiv</sup>. These studies led to HUD revising their guidance in 2013 to include thermal comfort as one of their eight elements of a healthy home<sup>xv</sup>. According to CDC, “those at greatest risk for heat-related illness include infants and children up to four years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications.<sup>xvi</sup>” Defining heat-related illness is ambiguous but is generally associated with the following diagnoses and/or comorbidities: dehydration, electrolyte abnormalities, mild heat cramps, heat stroke, hyperthermia, diabetes, obesity, nervous system disorders, renal diseases, epilepsy, and cardiovascular and respiratory diseases<sup>xvii</sup> (which are also exacerbated by the increase in outdoor pollutants associated with extreme heat<sup>xviii</sup>).

Heat-related illness reflects underlying racial and socio-economic inequities. As one example, a study of Richmond, Virginia found that neighborhoods with the most severe heat islands also have the highest levels of heat-related healthcare utilization (e.g. ambulance calls, ED visits) and are correlated with both communities of color and concentrated poverty<sup>xix</sup>. Additionally, researchers found that the lack of AC units explains some of the disproportionate impact of heat waves on the health of Black residents<sup>xx</sup>. In addition to preventing heat-related illness, having AC units is correlated with higher quality of sleep, which can lower individuals’ risk of pain, depression, and anxiety<sup>xxi</sup>. The presence of AC units also lowers exposure to outdoor air pollutants and their associated negative health effects<sup>xxii</sup>.

Qualitative feedback from practitioners<sup>xxiii</sup> suggest providing AC units alone is insufficient to ensuring they are used and suggests considering the following additional support measures:

- Medical-legal partnership services for tenants whose landlords threaten the use of AC units<sup>xxiv</sup>
- Supplemental funds directly or through partnership to pay for the costs of using AC units (utility bills, install and removal costs, rental fees, maintenance costs for replacing filters)
- Thermostats so clients know when to turn on AC units and can document their need to landlords

## Recommendations for Action

At the local level, communities across the country have addressed the lack of air conditioning in one of three primary ways:

- 1. Passing local legislation to require landlords to provide air conditioning, similar to requirements to provide heating and plumbing**
  - a. **Phoenix, AZ:** Requires landlords to provide AC units that keep habitable space below 82F<sup>xxv</sup>
  - b. **Dallas, TX:** Requires landlords to provide refrigerated air equipment that keep habitable space below 85F between April 1 – November 1<sup>xxvi</sup>
  - c. **Montgomery County, MD:** Requires landlords of multi-family buildings to provide AC units keeping habitable space below 80F between June 1 – Sept 30.

2. **Using *healthcare funds*, primarily Medicaid, to provide AC units for the medically vulnerable:**
  - a. **Oregon**'s 2012 approval from CMS to include 'flexible services' in its Medicaid program specifically highlights AC units as a low-cost intervention with a high health impact<sup>xxvii</sup>.
  - b. Many Medicaid programs, such as **Connecticut's**, will pay for air conditioners for medically vulnerable members who receive a physician's prior authorization<sup>xxviii</sup>.
  - c.
3. **Developing *innovative funding collaborations between foundations and governments to provide AC units***
  - a. NYC Department of Health identified providing air conditioners as their #1 recommendation to address heat vulnerability for NYC residents<sup>xxix</sup>. This summer, NYC launched a program to provide tens of thousands of free AC units via their Cooling Assistance (HEAP) program<sup>xxx</sup>.
  - b. **San Antonio** bought 2,400 AC units for its public housing units with \$500,000 each from foundations, the housing authority, and the city's general fund. The local utility, CPS Energy, provided a \$15 energy credit to recipients<sup>xxxi</sup>.

In addition to the local efforts described above, there are a number of federal policy changes that could provide direct, immediate relief to millions of families at heightened risk due to covid-19 and heat waves.

- ***U.S. Department of Housing and Urban Development (HUD)***
  - Update HUD's regulations to 1) require PHAs to provide air conditioning and 2) include the cost of operating air conditioning in the utility allowance
  - Allocate funding through HUD to the PHAs to install and maintain air conditioning units
  - Incentivize PHAs to install solar on their buildings to offset increased electricity costs, reflective of a recent administrative ruling eliminating the perverse incentive of installed solar decreasing tenants' utility allowance, thus increasing their utility burden.
  - Re-classify window AC units as permanent infrastructure, allowing CDBG funds and other HUD funds to be spent on window AC units, which are considerably more cost-effective than retroactively installing central air.
- ***Centers for Medicare & Medicaid Services (CMS)***
  - Issue Memorandum clarifying that air conditioners can be included as a Covered Benefit when deemed medically necessary, analogous to provision of other Durable Medical Equipment (DME)
  - Issue Memorandum explicitly identifying air conditioners as an allowable expenditure under chronic care management for Medicare Advantage plans
- ***U.S. Department of Energy (DOE)***
  - Update Weatherization Assistance Program (WAP) regulations to 1) allow its funds to be spent on AC units by any recipient, without needing a medical notice

and 2) increase the allowed percentage of funds to be spent on health/safety measures, which often prevent families in substandard housing from receiving WAP benefits

- Allow the non-energy impact of improving thermal comfort and reducing the risk of heat-related adverse health events to be included in the savings-to-investment ratio for the installation of air conditioning
- Increase funding for the Weatherization Assistance Program (WAP) to reflect its increased ability to address health/safety concerns and air-conditioning needs
- Update regulations to allow LIHEAP funds to be used uniformly for purchase and operation of air conditioning units
- Increase funding limits per unit for LIHEAP to offset costs of increased air-conditioning usage

Finally, these efforts should be coordinated with other efforts to reduce heat vulnerability, such as:

- Funding for programs to reduce heat islands, such as increasing tree canopy or cool roofs
- Address increased risk of power outages during extreme heat events through increasing air-conditioning efficiency standards, increasing incentives for solar and other renewable energy sources, and requiring utilities to better plan for peak outages due to extreme weather
- Prevent increased utility bills due to use of air conditioners through installing solar on public housing buildings and increasing incentives for installing solar and other energy-efficiency measures for low- to moderate- income residents who are at highest risk of heat vulnerability, especially through use of utility rate-payer programs.
- Coordination with other public service programs addressing social isolation, deteriorating housing conditions, and other social determinants of health

- 
- <sup>i</sup> <https://www.jstor.org/stable/3108472>
- <sup>ii</sup> <https://www.nejm.org/doi/full/10.1056/nejm199607113350203>
- <sup>iii</sup> <https://www.globalchange.gov/browse/indicators/us-heat-waves#:~:text=1.,it%20was%20in%20the%201960s.>
- <sup>iv</sup> See <https://e360.yale.edu/features/can-we-turn-down-the-temperature-on-urban-heat-islands>
- <sup>v</sup> <https://www.law.cornell.edu/cfr/text/24/965.505>
- <sup>vi</sup> <https://www.expressnews.com/news/local/article/Texas-public-housing-without-air-condition-13775031.php>
- <sup>vii</sup> <https://www.fayobserver.com/news/20180723/hud-ac-not-public-housing-requirement>
- <sup>viii</sup> <https://www.wnyc.org/story/life-new-york-public-housing-no-air-conditioning/>
- <sup>ix</sup> <http://www.annarbor.com/news/public-housing-struggles-lack-of-air-conditioning-one-of-many-problems-cited-by-ann-arbor-housing-co/>
- <sup>x</sup> <https://www.nejm.org/doi/full/10.1056/nejm199607113350203> Semenza, J. C., Rubin, C. H., Falter, K. H., Selanikio, J. D., Flanders, W. D., Howe, H. L., & Wilhelm, J. L. (1996). Heat-related deaths during the July 1995 heat wave in Chicago. *New England journal of medicine*, 335(2), 84-90.
- <sup>xi</sup> Klinenberg, E. (1999). Denaturalizing disaster: A social autopsy of the 1995 Chicago heat wave. *Theory and society*, 28(2), 239-295.
- <sup>xii</sup> Semenza JC, Rubin CH, Falter KH, et al. Heat-related deaths during the July 1995 heat wave in Chicago. *N Engl J Med*. 1996;335:84-90.
- <sup>xiii</sup> Curriero FC, Heiner KS, Samet JM, Zeger SL, Strug L, Patz JA. Temperature and mortality in 11 cities of the eastern United States. *Am J Epidemiol*. 2002;155:80-87.
- <sup>xiv</sup> Rogot E, Sorlie PD, Backlund E. Air-conditioning and mortality in hot weather. *Am J Epi emiol*. 1992;136:106-116
- <sup>xv</sup> [https://www.hud.gov/sites/documents/AHHASA\\_2-19.PDF](https://www.hud.gov/sites/documents/AHHASA_2-19.PDF)
- <sup>xvi</sup> See <https://www.cdc.gov/disasters/extremeheat/faq.html#:~:text=Who%20is%20at%20greatest%20risk,ill%20or%20on%20certain%20medications.>
- <sup>xvii</sup> Hansel, N. N., McCormack, M. C., & Kim, V. (2016). The effects of air pollution and temperature on COPD. *COPD: Journal of Chronic Obstructive Pulmonary Disease*, 13(3), 372-379. ([link](#))
- <sup>xviii</sup> See <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>
- <sup>xix</sup> See <https://e360.yale.edu/features/can-we-turn-down-the-temperature-on-urban-heat-islands>
- <sup>xx</sup> O'Neill, M. S., Zanobetti, A., & Schwartz, J. (2005). Disparities by race in heat-related mortality in four US cities: the role of air conditioning prevalence. *Journal of Urban Health*, 82(2), 191-197. ([link](#))
- <sup>xxi</sup> Sandberg, J. C., Talton, J. W., Quandt, S. A., Chen, H., Weir, M., Doumani, W. R., ... & Arcury, T. A. (2014). Association between housing quality and individual health characteristics on sleep quality among Latino farmworkers. *Journal of immigrant and minority health*, 16(2), 265-272.
- <sup>xxii</sup> Bell, M. L., Ebisu, K., Peng, R. D., & Dominici, F. (2009). Adverse health effects of particulate air pollution: modification by air conditioning. *Epidemiology (Cambridge, Mass.)*, 20(5), 682.
- <sup>xxiii</sup> GHHI conversations with staff in NY State Assembly Office who interact with many vulnerable seniors
- <sup>xxiv</sup> See <https://www.oregonlandlord.net/oregon-landlord-blog/2013/july/the-katu-problem-solver-interviews-attorney-murp/>
- <sup>xxv</sup> <https://phoenix.municipal.codes/CC/39-5>
- <sup>xxvi</sup> [http://dallas-tx.elaws.us/code/coor\\_appsid834932\\_ch27\\_artiii\\_sec27-11#:~:text=Minimum%20Standards,-%C2%A7%2027%2D11,Minimum%20Standards%3B%20Responsibilities%20of%20Owner.&text=\(6\)%20keep%20the%20doors%20and,closed%20to%20prevent%20unauthorized%20entry.&text=tenant%20property%3B%20or-\(ii\)%20a%20single%2Dfamily%20or%20duplex%20property%20where%20the,not%20shared%20with%20another%20property.](http://dallas-tx.elaws.us/code/coor_appsid834932_ch27_artiii_sec27-11#:~:text=Minimum%20Standards,-%C2%A7%2027%2D11,Minimum%20Standards%3B%20Responsibilities%20of%20Owner.&text=(6)%20keep%20the%20doors%20and,closed%20to%20prevent%20unauthorized%20entry.&text=tenant%20property%3B%20or-(ii)%20a%20single%2Dfamily%20or%20duplex%20property%20where%20the,not%20shared%20with%20another%20property.)
- <sup>xxvii</sup> McConnell, K. J., Chang, A. M., Cohen, D. J., Wallace, N., Chernen, M. E., Kautz, G., ... & Smith, J. (2014, September). Oregon's Medicaid transformation: an innovative approach to holding a health system accountable for spending growth. In *Healthcare (Vol. 2, No. 3, pp. 163-167)*. Elsevier. ([link](#))
- <sup>xxviii</sup> GHHI conversations with Connecticut Medicaid
- <sup>xxix</sup> Ito, K., Lane, K., & Olson, C. (2018). Equitable access to air conditioning: a city health department's perspective on preventing heat-related deaths. *Epidemiology*, 29(6), 749-752. ([link](#))
- <sup>xxx</sup> <https://www.pix11.com/news/local-news/nyc-is-giving-free-ac-units-to-low-income-seniors-as-summer-heats-up>
- <sup>xxxi</sup> <https://therivardreport.com/city-council-approves-final-funding-to-install-air-conditioning-in-public-housing/>