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Seeing the Heat: How a Communication Tool Transformed Experiences into Evidence for New York City's Climate Response

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As climate change intensifies heat, New York City faces mounting health risks. While quantitative data like temperature trends and mortality rates are essential, they cannot capture the lived experience of the climate crisis. *Your Heat Story*, a partnership between South Bronx Unite, Columbia University, and the NYC Department of Health and Mental Hygiene, addresses this gap by collecting and visualizing firsthand narratives from New Yorkers alongside public health data. By integrating stories with environmental health data, this project demonstrates how qualitative and quantitative approaches together strengthen climate communication. These narratives illuminate the cumulative toll of heat on physical, emotional, and mental health and community life, particularly in under-resourced neighborhoods. This initiative models a new form of government communication that uses public platforms for storytelling and relationship-building. In doing so, it advances awareness, informs policy, and offers a replicable framework for integrating narrative into climate-health resilience work.

KEYWORDS

Climate change, heat, climate resilience, NYC, data communication, story map, health impacts of heat

Climate-Driven Increases in Hot Weather are a Health Risk in NYC with Disproportionate Impacts on Communities of Color

Hot weather, intensified by climate change, threatens New Yorkers' health. Morbidity and mortality data alone cannot capture heat's full impact upon daily life. In 2021, Columbia University (CU) and South Bronx Unite (SBU) launched *Heat Story*, an interactive website, to capture impacts in residents' words alongside public health data. Subsequently, the NYC Department of Health and Mental Hygiene (the Health Department) partnered with the CU researchers and community advocates to redevelop *Heat Story* as a government resource, *"Your Heat Story,"* on the Environment and Health Data Portal.

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On the website, *Your Heat Story* combines quantitative data on climate impacts, and community-collected data (led by SBU and WE ACT for Environmental Justice) on unequal temperature alongside New Yorkers' stories of how heat affects their lives. It brings a human lens to data by layering environment, climate, and socioeconomic datasets that expose disparities and inequities, with narratives connecting data to lived experiences. Centering lived experiences alongside quantitative data makes it a useful tool for community-based organizations (CBOs) to organize climate resilience work.

Before developing *Your Heat Story*, Columbia researchers and SBU collaborated to gather stories from neighborhoods most impacted by heat: lower income communities and communities of color with lower rates of AC access. These disparities stem from racist policies like redlining and neighborhood disinvestment (*2025 Heat Mortality Report | Environment and Health Data Portal*, 2025;

Madrigano et al., 2015; Reid et al., 2009). SBU focused their campaign on Northern Manhattan and the South Bronx, where residents experience disproportionate burdens from industry, traffic, and housing disinvestment (Bullard, 2018).

During the development of *Your Heat Story*, we worked with the Climate Resilience Advisory Network (CRAN), a group of CBO representatives who advise climate resilience initiatives, to gather stories from their members—prioritizing stories from the most heat-vulnerable communities. Additionally, we launched a public submission form so anyone can share their heat story.

By June 2025, *Your Heat Story* received 28 new submissions through partner CBOs. We observed common themes across the submissions showing the cumulative burden of heat on health, affecting emotional, financial, and social dimensions of life. These illustrate lived experience beyond the scope of quantitative data.

Lived Experience in Government Communications

Most communication strategies encouraging the public to protect themselves during hot weather center quantitative data. For policy- and decision-makers, quantitative data is one of our most important assets, guiding policy. But quantitative data can fall short: Experts often overestimate non-experts' ability to understand statistics (Camerer et al., 1989; Dickens et al., 2013; Kelly & Haidet, 2007); some audiences find statistics confusing (Rudd & Baur, 2020).

As a result, communities most affected by climate-health issues often feel unseen and misunderstood by institutions (Watkins, 2025). Data can and should be designed "for everyone not just professionals" to be most effective (Montesano, 2025). Narrative forms and qualitative data can help readers relate to familiar situations (Green & Jenkins, 2014). Weaving testimonies into quantitative evidence can increase transparency into scientific and government processes, and increase public engagement with science (Southwell et al., 2025).

Firsthand accounts offer critical insights that structured, top-down monitoring and quantitative tools miss (Hernández & Laird, 2025; Newell et al., 2021). *Your Heat Story* demonstrates the strength of storytelling with quantitative data and the power of partnerships among academics, community organizations, and government.

Low Barriers to Participation Lead to More Community-Centered Messaging

Sharing an experience on *Your Heat Story* is accessible to anyone with internet access. There are no requirements for health or demographic information. Community-based organizations, as credible messengers, have helped bring submissions through trusted relationships with locals. By lowering barriers to continuous engagement with the public, *Your Heat Story* departs from a tradition of bureaucracy typically associated with daunting paperwork (Acar & Aupperle, 1984).

Publishing authentic lived experiences on a government resource challenges civic communication norms that prioritize neutrality and quantification over context and subjectivity. *Your Heat Story* reorients traditional communications strategies from a reactive position of responding to concerns, to being a government of the people.

Making Abstract Data More Tangible Through Narrative and Interactivity

Your Heat Story uses narrative and interactivity to increase engagement and provide meaning to abstract measurements. Using visualizations to interact with health indicators can have advantages over traditional methods (Zakkar & Sedig, 2017) and can empower the public to understand civic topics, instead of just decision-makers (Gordon & Mihailidis, 2016).

Stories Reinforce Quantitative Data and Expose Individual-Level Climate Impacts

On *Your Heat Story*, readers can absorb the effects of longer, more intense hot weather seasons on an individual scale, echoed by quantitative research from an official source. Overlaying testimonies onto social vulnerability indices like the Heat Vulnerability Index (HVI), helps contextualize these individual experiences, which are often complex, touching multiple facets of physical, mental, and emotional health, and the built and socioeconomic environment. (Figure 1)

For instance, due to the urban heat island effect, nighttime temperatures in NYC remain elevated, preventing bodies and homes from cooling down (Huang et al., 2021; Ortiz et al., 2024). These personal experiences are echoed in studies on the detrimental effect of heat on sleep (Zhou et al., 2024). These stories also bring to attention the need to focus on indoor environmental quality, as well as housing as a critical determinant of health (Swope & Hernández, 2019).

Intersection of Environmental Justice with Other Heat Vulnerable Communities

Climate-health impacts are complex and affect many communities (Matte et al., 2024). In the development of *Your Heat Story*, we partnered with CBOs without a main focus on environmental justice but who serve communities facing unique vulnerabilities. Both South Queens Women's March and Queer Disability Aid are volunteer-run organizations that center the needs of women and trans people in South Queens and Queer people with disabilities, respectively. Fountain House serves individuals living with severe mental illness.

Accessible communication can mean sharing a message in multiple ways (Supporting At-Risk Individuals with Access & Functional Needs in Emergencies, n.d.) like supplementing written content with audio, pictures, data visualizations, and interactive features. *Your Heat Story* communicates in an interactive, plain language manner and efforts are underway to include audio excerpts.

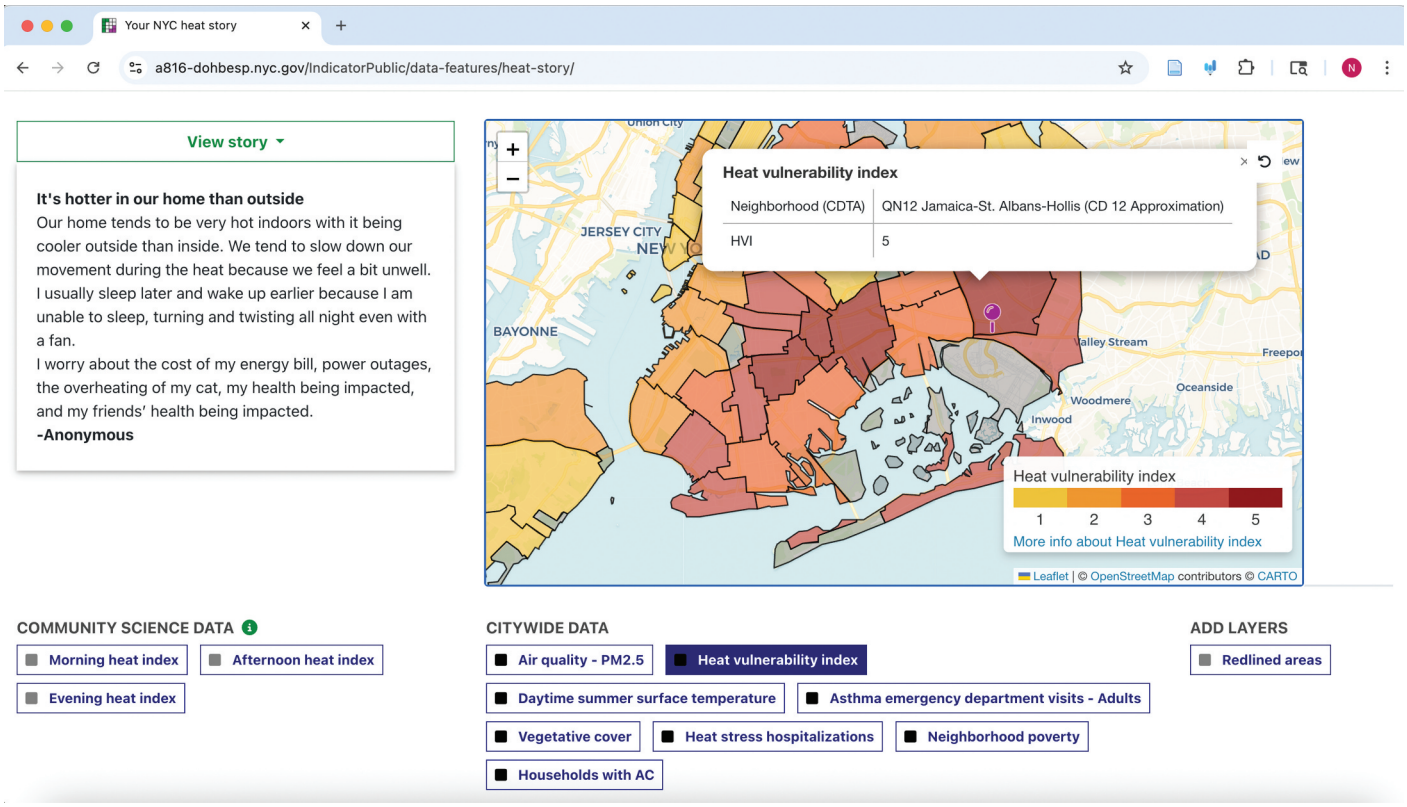


Figure 1. A story titled "It's hotter in our home than outside" shown with the Heat vulnerability index (HVI), illustrating the risk of community-level heat impacts.

Limitations and Gaps

Evaluation of *Your Heat Story* is ongoing, so we do not yet have evidence of direct effects on users. Preliminary engagement data (860 views since September 2025, with a July spike following newsletter promotion) provides a basic sense of reach but not impact. While these metrics suggest interest, they do not show whether or how the tool influences policy, institutional decision-making, or individual behavior. More evaluation is needed to understand its potential as a driver of climate-health action.

Because participation depends on online access, awareness, and trust in public platforms, the current narratives may not fully represent those most vulnerable to heat, including residents with limited digital access, language barriers, or distrust of government. The site is currently available primarily in English, which may further limit participation from linguistically diverse communities. More work is needed to understand how to ethically collect and share sensitive personal experiences at scale while protecting contributors' privacy and agency.

A New Form of Government Communication

Your Heat Story models an important form of government communication—one that treats public platforms not just as repositories of metrics, but also as spaces for storytelling, reflection, and relationship-building. By centering lived experiences, these heat stories not only help humanize the tolls of heat, they also make visible the structural and everyday barriers that residents face in protecting their health. They offer a tool for advocacy, giving community members a platform to voice their needs and for policymakers to listen and respond with greater accountability.

When government agencies bring community voices into climate-health work, we can enhance transparency and build trust between public service and the public. The partnership among the public, government, community organizations, and academia that first built *Heat Story* and then developed the public tool, *Your Heat Story*, is a replicable model for communicating the personal toll of the climate crisis. It demonstrates the power of narrative in both illustrating inequity and pushing for climate adaptation strategies that are rooted in everyday realities, such as pop-up cooling stations and low-income discount rates for electricity. In doing so, it reframes public health communication not as a one-way dissemination of risk information, but as a reciprocal process that can shape policy priorities, resource allocation, and climate resilience planning.

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Author contributions

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