Climate Change and Health Equity

> "We have been mortgaging the health of future generations to realize economic and development gains in the present."
>
> –The Rockefeller Foundation-Lancet Commission on Planetary Health

The health risks and impacts of climate change are not equally or fairly distributed across people, communities or nations. Some of the smallest and least developed countries bear the largest and most harmful burden, despite the fact that they contribute little to the problem compared to large, industrialized nations. Within the U.S., inequities in living conditions, power, and health place low-income communities and some communities of color at greater risk of the health impacts of climate change. Climate change thus exacerbates existing health inequities. We can reduce these inequities through careful attention to the design of climate mitigation and adaptation strategies, and efforts to build healthy, equitable, climate resilient communities.

Health inequities in the U.S.

Across the U.S., low income communities and communities of color suffer substantially higher disease burdens and lower life expectancies than wealthier and white populations:[1] The rate of diabetes among the poor is 1.5 times that of those who are not poor, deaths from heart disease and stroke are higher for non-Hispanic Blacks than any other ethnic group, and adults with a high school education or less are eight times more likely to report their health as "fair or poor" than those with a college education. In the Bay Area of California, a child born in impoverished West Oakland will die 10 years sooner than a child born a few miles away in the affluent Berkeley Hills.[2]

Health inequities are **"preventable differences in health outcomes that are the result of systemic, avoidable, and unjust social and economic policies and systems that create barriers to health resources and opportunities."**[3] Health inequities arise largely as a result of the physical, social, working, economic, and service environments in which we live, learn, work, pray and play.

These "social determinants of health" shape our health behaviors and health outcomes, and contribute far more to health status than medical care alone. They in turn are shaped by forces beyond the control of the individual: economics and the distribution of money, power, social policies and politics at the global, national, state and local levels.[4] Living conditions differ by place, race, and income, as a result of factors such as historical disinvestment in some communities, discriminatory practices and policies over time, structural racism, and higher pollution burdens in communities of color. At a fundamental level, the social determinants of health are related to the unequal distribution of power and wealth. Although this is slowly changing, low-income communities and communities of color are often disenfranchised and lack the political or economic power to win investments that promote health resilience.

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Existing health inequities (and the living conditions that contribute to them) provide the context in which people experience the health impacts of climate change.

FAST FACT:

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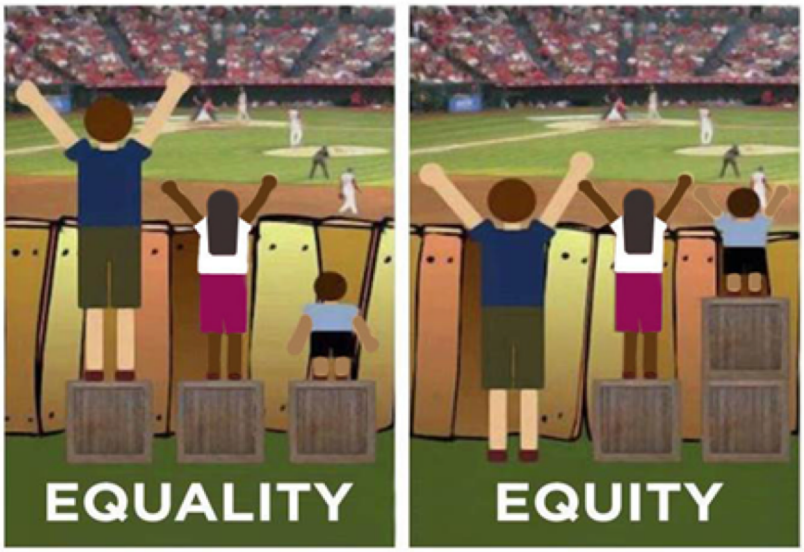
Health equity vs. health disparity:

Health equity is achieved when everyone has the opportunity to achieve their highest health potential, without limits imposed by social inequities.[5] Health inequities are different than health disparities in that they are rooted in unfair or unjust conditions. Achieving health equity means that we, as society, must create the conditions in which all people have the opportunity to achieve their highest health potential. Creating those conditions requires strategies that are fair, but not necessarily equal.



Climate vulnerability and climate resilience

Climate vulnerability is the degree to which people or communities are at risk of experiencing the negative impacts of climate change.[8] The flip side of climate vulnerability is climate resilience, which is the capacity to anticipate, plan for and reduce the dangers of the environmental and social changes brought about by climate change, and to seize any opportunities associated with these changes.[9] Because many communities currently lack the power, resources and opportunities that promote health and economic well-being, the concept of resilience also implies promoting the ability to not just remain the same in the face of climate change or after an extreme event, but also to become stronger and healthier — to "bounce forward."

Geographical location is, of course, an important consideration in climate vulnerability. Low-lying coastal communities are clearly at greater risk of coastal flooding from sea level rise and tidal storm surges than communities at higher altitudes. Three additional factors are most significant in determining the level of climate vulnerability or resilience in individuals and communities.

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DID YOU KNOW?

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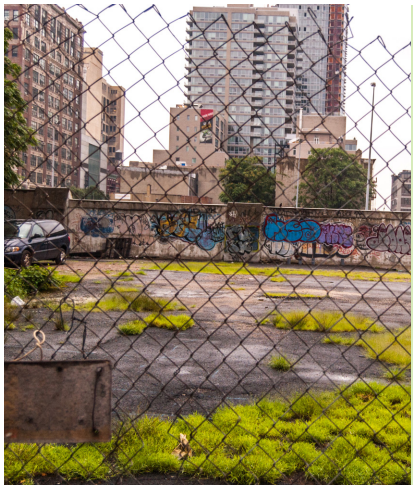

- **Pre-existing health status:** The existing health inequities that burden low-income communities and communities of color result in greater risk for some climate health impacts.
  - People who depend on medications or electric medical devices are at greater risk during a climate-related disaster.
  - Those with asthma or COPD are at greater risk of respiratory illness from increased ozone, wildfire smoke, and increased pollen.
  - People with cardiovascular disease and diabetes experience increased complications from extreme heat.
- **Living and working conditions:** The same physical, social, economic, and services environments that are associated with poor health outcomes for low-income communities and communities of color also increase vulnerability to the health impacts of climate change.
  - People living in areas with high levels of air pollution — for example near ports, freeways, or power-plants — are more vulnerable to increased ozone levels due to rising temperatures.
  - Park-poor and tree-poor neighborhoods with lots of pavement and buildings are at increased risk of the urban heat island effect.
  - Poor quality housing may increase exposure to heat (e.g. through lack of adequate ventilation or cool building materials) or to vector-borne diseases (e.g. through lack of window screens to keep out mosquitos)
  - Lack of transportation options may make it hard to evacuate timely in preparation for an extreme weather event or wildfire.
  - Outdoor workers, such as agricultural, landscape, and construction workers, are at higher risk of heat illness.
  - The "digital divide" that is experienced by low-income individuals means they may lack access to information about climate-related weather events, risks, and resources.
  - People living in poverty are less able to cope with various climate change impacts (e.g. rising food prices).
  - Low-income families are less likely to have the insurance or financial resources to rebuild their lives after a severe weather event like Hurricane Katrina or Super Storm Sandy. They are also more likely to live in areas where aging infrastructure is vulnerable to extreme weather events.
- **Lack of power and voice:** Low-income communities and communities of color are often historically disenfranchised, lacking the political and economic power and voice to ensure that their perspectives, needs and ideas are taken fully into account by decision makers. This lack of power shapes living conditions, health behaviors and pre-existing health status, and constrains the ability of low-income communities and communities of color to both respond to climate change impacts and contribute to mitigation strategies.

Characteristics of vulnerability and resilience may coexist at the same time. For example, a neighborhood may be exposed to high levels of air pollution but also have a strong local food system and a high-quality community clinic. An individual might have multiple chronic disease co-morbidities, but also have a very strong and supportive social network.

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DID YOU KNOW?

Health inequities are "preventable differences in health outcomes that are the result of systemic, avoidable, and unjust social and economic policies and systems that create barriers to health resources and opportunities."

Intergenerational equity[6 7]

In conversations about climate change we are often moved to consider creating a better future for our children or our children's children and generations to come. These invocations motivate us to act out of a sense of personal connection to our descendants, but they also push us to consider the principles of intergenerational equity in regards to climate change. At its simplest, intergenerational equity says that the fundamental rights and interests of future generations must be treated with equal value as the rights and interests of those living today. Future generations will inherit the earth and its atmosphere from those of us living today and we, in turn, are holding the earth and its atmosphere in trust for them. Starting from a framework of intergenerational equity, the need to prioritize sustainability practices in regards to energy production and use becomes more clear and urgent. By living and using the earth's resources in a sustainable manner today, we can better ensure their availability for use by future generations.

Prioritizing intergenerational equity can be a rallying point for cooperation between governing bodies around climate change, a shared value that helps the international community set aside blame and work together for a better future. Intergenerational equity also challenges us to take action NOW because it calls into question the use of economic discounting when weighing the costs and benefits of climate action. Because discounting prioritizes the present over the future, it places the benefits of fossil fuel burning today over the negative climate change impacts of tomorrow. Likewise, it overemphasizes the costs of climate action today compared to its future benefits. The result is the same: a business-as-usual approach to climate action that puts the rights and interests of future generations at risk for the sake of those living in the present. By challenging these economic appraisals, intergenerational equity changes the value equation, placing the health and wellbeing of future generations on par with our interests and rights today.

SB535: Ensuring that Disadvantaged Communities Benefit from California's Cap-and-Trade Program

Environmental justice advocates in California successfully pushed for legislation that is now resulting in the allocation of hundreds of millions of dollars of investments in low income communities and communities of color. SB535 (de Leon) — the California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund — requires that 10% of expenditures from the Greenhouse Gas Reduction Fund are spent in disadvantaged communities, and 25% must benefit those communities. Disadvantaged communities are identified by CalEPA, using an index that incorporates multiple indicators of exposure to toxics and a variety of other demographic and socio-economic indicators. All GGRF-funded projects must reduce greenhouse gas emissions. Examples of investments include:[10]

- $65 million for the construction of over 2,000 affordable housing units near transit stations, reducing the number of vehicle miles traveled and providing better access to transit for low-income families.

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DID YOU KNOW?

Some of the smallest and least developed countries bear the largest and most harmful burden, despite the fact that they contribute little to the problem compared to large industrialized nations.

SB535 continued

- $75 million for energy efficiency and weatherization upgrades to low-income single-family homes, lowering the cost of energy for these families and reducing greenhouse gas emissions.
- $18 million for urban greening and forestry programs in urban areas, providing healthy green space for physical activity and community-building while reducing urban heat island effects and flood risks, and removing air pollution and carbon dioxide from the atmosphere.

How can physicians contribute to building climate resilience?

Because vulnerability and resilience are so closely related to pre-existing health status and living and working conditions, anything we can do to improve chronic disease prevention & management and promote healthy community environments can also reduce vulnerability to climate change and build climate resilience. Physicians can play an important role in helping patients and communities reduce vulnerability and build resilience in the face of climate change impacts:

- Advocate for policies and systems changes that promote healthy living and working environments, such as walking and biking infrastructure or zoning for more urban farming.
- Assess patient risks and connect patients to community resources that address them, for example refer heat vulnerable patients to programs that help reduce electricity costs.
- Support policies and programs in your community and in your health system that authentically engage and partner with community residents in addressing climate and health problems.
- Learn about community climate vulnerability and advocate for changes to reduce risk, for example through programs to plant trees or expand the use of cool roofs.

In this Guide, you will find many specific strategies to promote climate change resilience. See also the fact sheets on "Climate Solutions for Healthy People, Healthy places, Healthy Planet."

- Transportation, Climate Change and Health
- Energy, Climate Change and Health
- Food & Agriculture, Climate Change and Health
- Urban Greening, Climate Change and Health

For More Information

- Kresge Foundation report on climate change resilience
  http://kresge.org/sites/default/files/Bounce-Forward-Urban-Resilience-in-Era-of-Climate-Change-2015.pdf
- Center for Climate Change and Health report on climate change and health equity
  https://www.phi.org/uploads/application/files/h7fjouo1i38v3tu427p9s9kcmhs3oxsi7tsg1fovh3yesd5hxu.pdf

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FAST FACT:

Adults with a high school education or less are eight times more likely to report their health as "fair or poor" than those with a college education.[1]

- EPA climate change fact sheets populations of concern https://www3.epa.gov/climatechange/impacts/health/factsheets/
- Bay Area Regional Health Inequities Initiative (BARHII) Climate change and health equity quick guides http://barhii.org/issues/climate-change/

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Citations

1 Centers for Disease Control and Prevention (2013). CDC Health Disparities and Inequality Report. MMWR, 62(3).

2 Bay Area Regional Health Inequities Initiative. (no date). Health inequities in the Bay Area

3 CDC — Social Determinants of Health — Definitions. 2014. Available at: http://www.cdc.gov/socialdeterminants/Definitions.html.

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5 Minnesota Department of Health. Health Equity Terminology. Available at: http://www.health.state.mn.us/divs/chs/healthequity/definitions.htm

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7 Youth Submission for he Ad-Hoc Working Group on the Durban Platform (ADP). 2013. United Kingdom Youth Climate Coalition. Available at http://unfccc.int/resource/docs/2013/smsn/ngo/357.pdf

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9 Island Press & The Kresge Foundation. (No Date). Bounce forward, urban resilience in the era of climate change. Island Press. Available at http://kresge.org/sites/default/files/Bounce-Forward-Urban-Resilience-in-Era-of-Climate-Change-2015.pdf

10 Rabin, J.L., Callahan, C., & DeShazo, J.R. (2015). A guide to greenhouse gas reduction fund program designs, expenditures, and benefits. *UCLA Luskin Center for Innovation*.

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