PRACTICE Greenhealth

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Delivering community benefit:

Climate and health

Addressing social and environmental determinants of health to create resilient communities

"Tackling climate change could be the greatest global health opportunity of the 21st century."
- The Lancet Commission

Why consider climate in community health needs and benefits?

Climate change affects the social and environmental determinants of health: clean air, safe drinking water, sufficient food and secure shelter. Doctors are increasingly treating patients with climate-related illnesses, and more than 70 percent recognize that climate is affecting their patients. The U.S. Environmental Protection Agency (EPA) predicts these changes will exacerbate some of our most pressing community health risks: obesity, diabetes, cardiovascular risks, asthma, access to care, and mental health concerns. Children, elderly, and those with inadequate access to health care are most vulnerable.

Many hospitals miss opportunities to enhance community resiliency and community health when they fail to consider the health consequences of a changing climate. Unlike other health concerns, climate-related risks do not have a disease code, which makes it difficult to categorize impact.

The community health needs assessment (CHNA) process provides a unique opportunity for hospitals to align their environmental and community health goals for mutual benefit. Collaboration among environmental staff and community benefits staff in this work can drive "climate co-benefit" initiatives that directly improve public health while at the same time reduce greenhouse gas emissions.

Gain added benefits by:

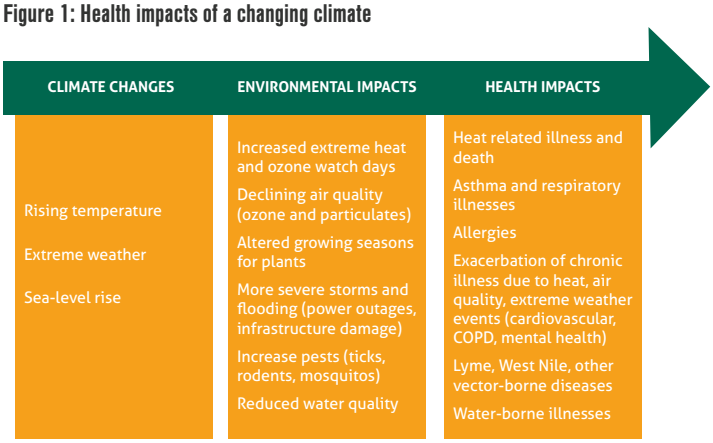
- Leveraging hospital staff's environmental and facilities expertise in community health needs assessment work.
- Pursuing health activities that also benefit the environment or improve community resiliency.
- Tackling the social and environmental determinants of health.
- Advancing greater recognition for community health work by aligning it with environmental and climate goals.

Climate co-benefits occur when community health work also reduces transportation emissions, fossil fuel use, and other greenhouse gas emissions.

A changing climate creates significant health and financial risks.

The Lancet Commission on Health and Climate Change concludes that "tackling climate change could be the greatest global health opportunity of the 21st century." Globally, the World Health Organization (WHO) estimates climate change-related deaths already exceed 150,000 per year. Locally, health care systems are already experiencing the health impacts of climate change in their communities, including increases in heat-related illness, asthma and respiratory illness, as well as injuries and premature deaths from extreme weather events. When Hurricane Irene hit, Northwell Health incurred an estimated loss of $13 million associated with the event, including $4 million for labor and supplies and $9 million in revenue lost from hospital closures. Under current conditions these environmental changes will produce even greater health consequences, which are described in more detail in this section and in Figure 1.

Figure 1: Health impacts of a changing climate



Rising temperatures increase heat-related illness or death. By 2050 Midwesterners could experience 15 to 25 days per year when it would be unsafe to be outside due to heat and humidity. In Florida, EPA estimates it could be more than 50 days each year. Los Angeles residents will endure an 83 percent increase in the number of days when the temperature exceeds 95 degrees by 2030. Past heat waves offer lessons. In 1995, thousands of Chicago residents experienced heat-related illnesses, and 700 people died. Temperature increases have been associated with spikes in violent crimes. Expanded warm seasons and milder winters have spurred the spread of Lyme disease, Dengue fever, and West Nile virus to regions previously unaffected.

Extreme weather and rising seas increase health risks and disrupt critical infrastructure. More frequent and extreme weather events, along with coastal sea level rise, will result in increased deaths and injuries. Battering winds and floods caused by extreme storms like Hurricanes Harvey, Irma, Maria, and Katrina and Super Storm Sandy have left a trail of human suffering that continues today in some of the most densely populated cities in the United States. Long-term disruption of public water supplies, sewage treatment, transportation systems, health care infrastructure, and energy, food and economic systems undermine supports that are critical for a resilient, healthy community.

Declining air quality increases asthma, cardiovascular disease, and premature death. Climate change is driving drastic reductions in air quality. As temperatures warm, increased amounts of ozone are expected. Changing weather patterns are expected to alter concentrations of fine particulate matter, emitted by power plants, vehicles, and wildfires. Living with higher levels of ozone and particulate matter increases the risk of respiratory illnesses, cardiovascular disease, and premature death. In events that decrease air quality such as wildfires, studies have shown the increased particulate matter is an important source for adverse respiratory health outcomes.

Vulnerable populations suffer disproportionately. The impacts of climate change fall disproportionately on people who are poor, very young, elderly, or chronically ill. For example, seniors with chronic obstructive pulmonary disease (COPD) and heart issues who live in areas with greater air pollution will likely experience increased breathing and heart problems on higher heat days. If the power goes out, they will be unable to run oxygen supplies or other mechanical health supports, operate air conditioning, or get to cooler shelter. Greater numbers of low-income children, who already disproportionately suffer from asthma, will experience asthma symptoms that could prevent them from going to school and may send them to the emergency room, which also increases health care system costs, according to the Centers for Disease Control (CDC). Addressing climate risks, which are social and environmental determinants of health, can help reduce health risks for vulnerable populations. To learn about the social determinants of health, see WHO and CDC resources.

Disrupted ecosystems threaten food supplies and expand regions vulnerable to vector-borne diseases. With the extension of longer, warmer seasons to larger geographic

regions, there are greater opportunities for diseases such as Lyme to thrive, and for new diseases to emerge. Changes in local agriculture and seafood production can cause shifts in the development of pathogens that target humans or the food on which we depend. Furthermore, extreme weather events and struggles over scarce resources are creating more and more "climate refugees" who seek the safety of places with more stability and resources.

Align environmental stewardship and community health activities to amplify impact.

Many health care system staff — especially environmental, facilities, and procurement staff — are pursuing activities to reduce their environmental footprint. At the same time, community benefit staff are undertaking community health activities to address priorities identified in their CHNAs.

By working together, these groups can share expertise and resources to more effectively and simultaneously address environmental and health goals. For example, hospital procurement staff with expertise in developing local supply chains to integrate sustainably grown food into hospital meals could help other community meals programs reduce their environmental impact. Behavior change expertise among facilities and human resources staff could help community partners and transportation plans to encourage residents to walk, bike, or take public transportation to work.

These mutually beneficial collaborations are taking hold at University Hospitals in Cleveland, Ohio, where environmental stewardship and community health staff collaborated to incorporate climate risks into their CHNA and pursue health work with climate co-benefits. Environmental staff are including this work in their environmental goals to ensure the hospital tracks and communicates to internal leadership and external partners the full breadth of its environmental agenda and accomplishments. As part of their Total Health initiative, Kaiser Permanente's community health staff are collaborating with environmental and procurement staff to amplify hospital efforts to purchase food from farmers following sustainable practices in broader community health collaborations.

Environmental Leaders Recognize the Opportunity

"Aligning our environmental stewardship strategic plan and tactical workflows with community benefit outreach is a ***game changer****. It redefines the work as central to Providence's core strategy of creating healthy communities. It's now about the health of the communities we serve, not just reducing our waste streams and increasing our bottom line efficiencies."*

- Richard Beam, Chief Environmental Officer
Providence St. Joseph Health

"Connecting our environmental and community health staff helps us achieve our broader ecological and population health goals, and serve as a critical community resources."

- Sister Mary Ellen Leciejewski,
Director of Ecology
Dignity Health

This toolkit uses "community benefit" and "community health" interchangeably. For some, "community benefits" refers to specific activities and in-kind actions connected to the federally required community health needs assessments. "Community health" activities often refer to broader work that seeks to improve the lives of those in our communities.

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Key steps for environmental and community benefit staff

Environmental stewardship and community benefit staff each bring expertise to build climate resilience into strategies that address CHNA priorities. Working together they can align their activities to achieve larger impact. Key implementation steps are described in this section.

1. BUILD A TEAM: IDENTIFY ENVIRONMENTAL STEWARDSHIP AND COMMUNITY BENEFIT STAFF TO COLLABORATE ON THIS PROJECT.

Environmental stewardship staff may include the following job functions: environmental services, human resources, food and nutrition services, facilities, energy management, and supply chain. Staff managing community benefits and related community health work may be in departments that include: community benefit, community or population health, community outreach/ relations, government/public relations, and community education/ prevention.

Team members should gather current materials to inform the work. Environmental stewardship staff can collect local climate-related health information from local and state health departments or other community partners. Many cities and states have climate strategy plans that can help inform and prioritize your efforts. Community benefits staff should gather their most recent CHNAs. All nonprofit hospitals are required to prepare a CHNA every three years to identify local health priorities. (Some health care systems update these reports more often.) Environmental stewardship staff may also download these CHNAs, which are publicly available on hospital and health care system websites. For additional information on the CHNA process, visit the Hilltop Institute website.

This initial exchange of information can lead to collaborations outside the CHNA and community benefits process, like this example Advocate Health Care:

Advocate Health Care

Environmental sustainability staff reached out to their community health colleagues to describe their sustainability work, explore mutual goals, and identify ways to collaborate. This initial meeting resulted in a collaborative effort to organize farmers' markets with a current Advocate produce vendor. Public Affairs and Community Health teams offered healthy recipes, provided incentive cards to associates (as part of their associate wellness program), and materials for support groups offered at the hospital. Leftover produce was donated to a local organization.

2. IDENTIFY OPPORTUNITIES: INCORPORATE CLIMATE CO-BENEFITS INTO COMMUNITY BENEFIT WORK AT HOSPITAL OR SYSTEM LEVEL.

Next, convene environmental and community benefit staff to discuss shared goals, existing projects, hospital or system resources, and current community benefit activities. (See this sample email from environmental stewardship staff introducing the collaboration.)

A. Collectively ask and answer these questions:

How can we explore opportunities to promote climate co-benefits and resiliency in our community health work?

Review recent CHNAs to determine if and how climate risks were considered:

- Did our CHNA consider climate risks?
- Could the current health priorities be exacerbated by climate risks?
- Could our community health activities generate climate co-benefits?
- Are there opportunities to align the community health work with broader system climate goals and projects?

B. Complete the Community Benefit Climate Change Scorecard.

The scorecard will help identify linkages between community health activities and opportunities for climate co-benefits by guiding you through questions to determine if health activities are also reducing greenhouse gases and climate risks.

Community Benefit Climate Change Scorecard excerpt
(Sample community benefit activities with climate co-benefits)

- ☑ Support farmers' market promoting local, sustainably produced food in low-income food deserts. [T, E, OGHG]
- ☑ Provide technical assistance for increased access to healthy foods in schools, promoting increased consumption of vegetables and fruit. [OGHG]
- ☑ Safe walking routes to schools. [T]
- ☑ Support for local greenway to encourage walking in downtown areas, limiting cars. [T, OGHG]
- ☑ Support local green food production and solar cooperative businesses. [T, E]
- ☑ Free shuttle bus services to hospital or clinics. [T]
- ☑ Online asthma tools to help to minimize child ER use. [T]
- ☑ Phone-based support or telemedicine for high-risk patients. [T]
- ☑ Locate additional community health centers to increase access to care. [T]
- ☑ Support housing repairs with energy upgrades for low-income asthmatics. [E]
- ☑ Subsidized public transit passes to walking and increase access to care. [T]
- ☑ Support for transportation planning to reduce car use and encourage active transit. [T]

Key: T= reduced transit emissions; E= reduced dependence on fossil fuel; OGHG= other greenhouse gas benefits (e.g., methane reduction or carbon sequestration in plants/trees).

C. Review tools to incorporate climate health threats into CHNAs, and decide which work for you. Examples include:

- Practice Greenhealth's Climate Indicators Summary spreadsheet, which estimates future climate health impacts in the hospital system service area. This tool relies on national data sets and models to provide quantitative and qualitative estimates for future health threats. First-time users typically require four to six hours to complete the spreadsheet, which also introduces you to a range of data sets that are helpful in other initiatives. Once familiar with the tool, users report they create new reports in less than two hours.

Climate health indicators excerpts: Northern Virginia
Sample prepared by Practice Greenhealth

Rising temperatures and heat-related events		
# Days > 95 degree	2030	200% increase
Increased emergency room visits	2030	3,101/year
Reduced air quality		
Ozone: increased acute respiratory symptoms	2100	18,560 cases/year
Particulates: increased mortality and hospitalizations	2100	149 deaths/year 110 hospital visits/year
More Extreme Storm Events		
Sea level rise	2100	36 inches 3,400 people affected

- Many hospitals use the Climate and Health Report Indicators for Community Commons Platform to prepare CHNAs. This template identifies key data elements to create a report describing current climate risks and metrics to track progress using existing Community Commons data. The template also suggests supplemental data sets. Unlike the Practice Greenhealth Climate Indicators Summary, this report will not provide estimates for future climate-related health impacts.

D. Consider strategies to leverage and align community health and climate efforts described in "Leveraging Hospital Community Benefit Activities to Address Climate and Environmental Risks." This paper provides examples to maximize climate co-benefits and internal health care system resources when pursuing common health priorities: obesity, diabetes and/or cardiovascular risks; asthma and respiratory risks; access to care; and substance abuse.

Train and engage staff to use these tools.

Providence St. Joseph's Health system is convening capacity building workshops to consider climate co-benefits with their Community Benefits staff, creating a climate health risk report in Community Commons, testing software to track health activities with climate co-benefits, and incorporating climate approaches at one of their Montana hospitals.

"Connecting climate risk and our health work makes good sense at the system and hospital level."

- Dora Barilla, Executive Leader, Community Investment, Providence St. Joseph Health.

E. Discuss strategies to track climate co-benefits in community benefits reporting. Some software tools (e.g., Lyon's Community Benefit Inventory of Social Accountability, CBISA) can track activities with climate co-benefits and generate relevant reports.

Select hospitals to incorporate climate into upcoming CHNAs or strategies to implement community health work.

3. INCORPORATE CLIMATE CHANGE RESILIENCE INTO COMMUNITY HEALTH NEEDS ASSESSMENTS.

After completing step 2 and selecting which hospital(s) will incorporate climate language into the CHNA or strategies to implement community health work, ask:

How can we find data to characterize local climate health and resiliency threats?

Use the tools identified in step 2 to characterize climate health risks. Local climate and resiliency plans may also provide helpful information. Several health care systems have taken steps to consider climate in their CHNAs.

Sample language to use in the CHNA can be found in this guide's Tools and Resources section.

Kaiser Permanente

"In our most recent round of CHNAs over 30% of our hospitals identified climate and health as a need. We responded by incorporating a climate and health lens to many of our identified health needs including: obesity, mental health, violence, asthma, access and economic security. We asked ourselves, how we can address other health needs with a climate and health lens? For example, when addressing obesity, can we think about active transportation or locally sourced healthy food? To address access, how about e-consults? To address economic security, could we hire locally? It was a new way to frame our work."

- Pamela Schwartz, Senior Director for Community Health Impact and Learning, Kaiser Permanente

University Hospital in Cleveland Ohio incorporated climate into their Samaritan Medical Center CHNA (excerpt below)

"Climate change and the resulting increases in temperature, air pollution, and extreme weather events will have profound impacts on the health of our population, particularly the most vulnerable (seniors, children and lower income). These changes in our environment will likely exacerbate some of our current health priorities, including obesity, diabetes, cardiovascular risks, respiratory risks, mental health concerns and violence. Our community benefit investments are an opportunity to address health priorities using strategies that also reduce greenhouse gas emissions, mitigating the health risks of a changing climate. University Hospitals will explore such opportunities as we develop our implementation strategies... Evaluating future health impacts of climate change in the CHNA process and potentially incorporating climate co-benefit actions into the implementation activities phase of the work offer UH Samaritan Medical Center the opportunity to address these long-term future health impacts using short-term actions."

4. TAKE ACTION: PURSUE COMMUNITY HEALTH STRATEGIES WITH CLIMATE CO-BENEFITS.

Health care systems can leverage their staff and experience to help community health work align with environmental goals. As your facility designs its community health activities, ask:

How can we pursue our health goals and reduce transit, fossil fuel, or other greenhouse gas emissions at the same time?

Engage your environmental, facilities, procurement, food services, and other staff when designing initiatives. Consult Practice Greenhealth's "Leveraging Hospital Community Benefit Activities to Address Climate Change and Environmental Risks report," which highlights evidenced-based community health activities that can create climate co-benefits and identifies internal health care system capacity to help inform such programs. The report focuses on common health priorities: obesity, diabetes, cardiovascular risks, access to care, substance abuse, and asthma. Excerpts are provided with examples of health care systems that have pursued community health activities with climate co-benefits.

Excerpt from the *Leveraging Hospital Community Benefit Activities to Address Climate Change and Environmental Risks* report.

Obesity/diabetes/ cardiovascular-related community benefit activities	Climate and environmental benefits*	Potential external or community partners	Related internal staff resources or expertise	Related examples or resources
FOOD				
Increase access to healthier sustainable foods in restaurants, schools, senior meal programs, employer-sponsored cafeterias, and farmers markets.	Reduces transit fuel use, fossil fuel use, and other greenhouse gas emissions (less methane with reduced meat diet) Reduces fertilizer, pesticides, packaging, air pollution	Schools, restaurants, employers with food services, farmers, Meals on Wheels	**Food services:** influence hospital menu planning and engage with farmers markets; provide technical assistance for schools, senior centers, local government during program implementation **Environmental services:** provide resources to calculate energy and climate benefits of sustainable food adoption **Procurement and supply:** assist in the design and implementation of programs to provide local food to community organizations	Healthy food and beverage options Kaiser Permanente farmers markets and sustainable food projects Berkeley Cool Climate Calculator
TRANSIT				
Create bike or walking paths to encourage physical activity and reduce transit fossil fuel use.	Reduces transit fuel use and air pollution	Schools, local employers, city recreation	Employee wellness: encourage employee biking and walking Facilities: install bike racks at health system campus and in the community, create walking paths, advise local employers	Seattle Children's Hospital
Access to care	**Climate and environmental benefits***	**Potential external or community partners**	**Related internal staff resources or expertise**	**Related examples or resources**
Create satellite community health centers.	Reduces transit fuel use and outdoor air pollution	Public agencies, community groups, health advocates, school nurses, school administrators	**Community relations:** assist in locating and permitting facilities, connections to affordable housing owners with potential users **Medical providers:** encourage patients to use community centers **Facilities:** manage planning process and construction	Mobile health clinics

Local Healthy Food Businesses Can Reduce Food-Related Transit Emissions

University Hospitals, Cleveland Ohio

Hospitals in Cleveland supported the creation of the Evergreen Cooperatives, a local wealth building and jobs initiative. The Co-op supports several businesses including Green City Growers, a hydroponic greenhouse producing local food, reducing transit emissions. University Hospitals, along with numerous other businesses and institutions, purchases lettuce from Green City Growers. The longer shelf life and quality of the local lettuce is a key selling point.

Transportation Projects Can Improve Health and Combat Climate Change

Seattle Children's Hospital Seattle WA

Recognizing the link between the built environment and health, Seattle Children's supported a comprehensive transportation plan to improve traffic, reduce driving, and encourage physically active transportation to improve the health of city residents and the environment. Plan goals include: fewer commute vehicle trips, reduced air pollution, and fewer greenhouse emissions. Conducted in conjunction with Seattle's Department of Transportation, the effort used hospital funds to support the Livable Streets initiative to alleviate traffic congestion and make streets healthier. This investment is part of the Community Benefit plan aimed at reducing health inequities reflected in the surrounding community. As part of their expansion of services, Seattle Children's is also devoting $4 million in transportation improvements.

5. CLAIM THE BENEFITS: DOCUMENT CLIMATE CO-BENEFITS IN IRS REPORTING.

Nonprofit hospitals are required to report their community benefit activities to the IRS (Form 990, Schedule H). Hospitals may report environmental and climate-related actions in either the community benefit category as community health improvement services (Part I, 7. E) or in the community building category as environmental improvements (Part II, 4). The instructions to Schedule H provide the IRS definition for "environmental improvements." An environmental or climate-related activity that might otherwise be community building can be reported as a community health improvement when the activity meets the IRS criteria for community health improvement, as described in the IRS instructions for Form 990, Schedule H.

> *"Part VI of Schedule H is an excellent opportunity to tell the full community benefits story. Here hospitals can report their leadership activities and ways they work with the community to improve well-being, including efforts to reduce their carbon footprint and address health problems associated with climate change."*
>
> - Julie Trocchio, Catholic Health Association community benefit and continuing care senior director

Part VI supplemental information (Line 5 of Schedule H) also provides an opportunity to describe activities that promote the health of the community not described elsewhere. This is an appropriate location to list health activities with climate and environmental co-benefits and discuss how reduced greenhouse gas emissions will mitigate health risks for vulnerable populations most affected by climate change.

Software used by systems to track community benefit activities allows hospitals to tag community benefits with climate or environmental co-benefits and generate reports of all such activities.

> *Providence St. Joseph Health modified their community benefits software to create a special code to track all community benefit work with climate or environmental co-benefits.*

6. SHARE FINDINGS: COMMUNICATE HEALTH AND ENVIRONMENTAL CONNECTIONS TO HEALTH CARE LEADERSHIP AND COMMUNITY STAKEHOLDERS.

Environmental and community health staff can offer hospital and health care leadership a compelling message:

> *Health care is already a critical component of our community's ability to prepare for and respond to the negative impacts of climate change.*

Using the strategies described in this toolkit, hospitals can capture the benefits of that work and leverage it to address public health threats and build resilience to climate change.

Healthy Food Programs Can Create Climate Co-Benefits

Kaiser Permanente, Northwest Region

Kaiser Permanente provided over $1.2 million in grant funds and technical assistance to support increased access to healthier local foods in Oregon and SW Washington in 2011-2014. Activities included work with:

- 11 school districts to expand procurement of locally produced food;
- 12 Head Start Centers to serve locally grown fresh produce;
- 1 correctional facility to expand its community garden by 56% producing 5,000 lbs. of organic vegetables and herbs/year, install a greenhouse, and reduce daily menu calories by 25%; and
- 10 Community Supported Agriculture (CSA) farms to offer 75 SNAP paid shares for 300 individuals.

Emphasizing locally sustainably grown food and a plant-based diet helps to reduce greenhouse gas emissions. Local sustainable food production can be less energy intensive and require less transportation, reducing air pollution. Increased plant versus meat consumption reduces methane emissions, a potent greenhouse gas.

More information on Kaiser Permanente activities

Inova Health System explains the climate and health connection to their patients in *Healthy Climate, Healthy Children: How Climate Change Is Impacting our Children's Health*.

Tools and resources

Practice Greenhealth tools to incorporate climate into community health needs assessments

- Leveraging community benefit activities to address climate change risks (slides)
- Community benefit climate change scorecard
- Climate indicators summary (spreadsheet to calculate local health risks) and sample for Southern California
- Climate and health report indicators for Community Commons platform
- Sample email from environmental services staff to community health staff suggesting collaboration
- Sample climate text for community health needs assessment reports

Health care system examples

- Inova Health Systems, "Healthy Climate, Healthy Children: How Climate Change Is Impacting our Children's Health"
- Inova Fair Oaks Hospital, 2016 community health needs assessment (climate text, page 89)
- University Hospitals Samaritan Medical Center, 2016 community health needs assessment (climate text, pages 37-39)
- University Hospitals Samaritan Medical Center, 2016 implementation strategies (climate co-benefit text, page 8)

Climate and health background resources

- Community Benefit: Impact of Climate Change and the Environment, Multi-Purpose Strategies and Co-Benefits, Health Progress, 2016.
- Climate Change in the United States: Benefits of Global Action. United States Environmental Protection Agency, Office of Atmospheric Programs, 2015, EPA 430-R-15-001

Community health needs assessment background resources

- Association of State and Territorial Health Officials issue briefs
- Catholic Health Association community benefit overview
- Hilltop Institute summary of community health needs assessment reports

Social determinants of health background resources

- U.S. Centers for Disease Control
- World Health Organization

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