Collaborating to Build Resilient Health Care

October 21, 2020
2:00 – 3:00 p.m. ET
Presented by
Register and view recordings at CleanMed.org

Sept. 23
Keeping sustainability front and center

Sept. 30
How 1 hospital added 48k plants and improved community health

Oct. 7
Resilience from farm to plate

Oct. 14
Rethinking supply chains in response to COVID-19

Oct. 21
Collaborating to build resilient health care

Oct. 29
Clinical sustainability: Environmental stewardship at the bedside

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Audience Poll

Which represents the primary nature of your organization?

- Hospital
- Community health center
- Other health care facility
- Community-based organization
- Public health department
- Other local, state, national municipality or office
- Health insurance
- Health data management
- Other health industry / company or supplier
Elizabeth Gillespie, M.D
Internal Medicine
Assistant Professor, Medicine - Hospital Medicine
Denver Health

Heather Hodge, M.Ed.
Senior Director, Community Health
YMCA OF THE USA

Harvey "Chip" Amoe III, J.D., M.P.A.
Director of Sustainability
Henry Ford Health System
What does it mean? Environmental Health

- Healthy Community Design
- Building Partnerships
- Natural Environment
- Environmental Health Systems

Advancing the Field of Environmental Health by

- Improving population health through healthy living
- Promoting health equity and environmental justice across places
- Providing a voice for environmental health practitioners
What does it mean? Environmental Justice

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

This goal will be achieved when everyone enjoys:
- the same degree of protection from environmental and health hazards, and
- equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

Environmental Justice and Health Alliance

An excerpt from EJHA 17 principles:
- Environmental Justice affirms the fundamental right to political, economic, cultural and environmental self determination of all peoples.
- Environmental Justice demands the right to participate as equal partners at every level of decision making, including needs assessment, planning, implementation, enforcement and evaluation.
- Environmental Justice affirms the right of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards.

https://www.epa.gov/environmentaljustice
https://ej4all.org/about-us/environmental-justice
“. . . Our racial inequality crisis is intertwined with our climate crisis. If we don’t work on both, we will succeed at neither.”

- Ayana Elizabeth Johnson

Principles for Improving Community & Population Health

• 20/80 Rule for Health
  • 20% Determined by Healthcare, 80% Environment and Life choices

• Social determinants of health play a major role in health
  (environment, diet, poverty, employment)

• “Programs” not as impactful as places

• Meet people where they are, both physically and emotionally

• Create opportunities to make the healthy choice the easy choice
Air Pollution and COVID-19

• Counties that have more polluted air will experience higher risks of death for Covid-19 (*Harvard*)

• An increase of only 1 μg/m3 in PM2.5 is associated with a 8% increase in the COVID-19 death rate (*Harvard*)

• In 2003, SARS patients in the most polluted parts of China were twice as likely to die from the disease as those in places with low air pollution (*UCLA*)
Air Pollution Equity and COVID-19

- Black people made up 33 percent of cases in Michigan and 40 percent of deaths, despite being just 14 percent of the state’s population.

<table>
<thead>
<tr>
<th>Race</th>
<th>Percentage of Overall Cases by Race</th>
<th>Percentage of Deceased Cases by Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Indian or Alaska Native</td>
<td>&lt;1%</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>2%</td>
<td>1%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>31%</td>
<td>40%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>37%</td>
<td>51%</td>
</tr>
<tr>
<td>Multiple Races</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
<td>2%</td>
</tr>
<tr>
<td>Unknown</td>
<td>16%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Source: https://www.michigan.gov/coronavirus/0,9753,7-406-98163_98173---,00.html
Resiliency

- More frequent and extreme weather-related events
  - Hurricanes
  - Floods
  - Wildfires
  - Tornados
  - Blackouts

- Threaten hospitals and the communities they serve directly, but also threaten supply chains. (e.g. Hurricane Maria, Puerto Rico 2017 and IV bag shortage)

Inequitable Pandemic Exposure
Latinos’ coronavirus deaths at meat processing plant raise alarms about worker safety

“These workers suffer the most. If the plants shut down, they lose their income. They also are losing their lives,” said union leader Kim Cordova.

Latinos, many with essential jobs, disproportionately affected by COVID-19

Hispanic people now account for nearly a third of all coronavirus cases.
Blacks infected at a rate twice higher than expected (single health system)

- 77% patients hospitalized, and 70% who died were black
- only 31% of the population black
Coronavirus and health equity

Factors which increase risk of death and covid-related complications

- discrimination
- healthcare access
- occupation
- gaps in education, income, and wealth
- housing insecurity

<table>
<thead>
<tr>
<th>Rate ratios compared to White, Non-Hispanic Persons</th>
<th>American Indian or Alaska Native, Non-Hispanic persons</th>
<th>Asian, Non-Hispanic persons</th>
<th>Black or African American, Non-Hispanic persons</th>
<th>Hispanic or Latino persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases(^1)</td>
<td>2.8x higher</td>
<td>1.1x higher</td>
<td>2.6x higher</td>
<td>2.8x higher</td>
</tr>
<tr>
<td>Hospitalization(^2)</td>
<td>5.3x higher</td>
<td>1.3x higher</td>
<td>4.7x higher</td>
<td>4.6x higher</td>
</tr>
<tr>
<td>Death(^3)</td>
<td>1.4x higher</td>
<td>No Increase</td>
<td>2.1x higher</td>
<td>1.1x higher</td>
</tr>
</tbody>
</table>

\(^1\) Data source: COVID-19 case-level data reported by state and territorial jurisdictions. Case-level data include about 80% of total reported cases. Numbers are unadjusted rate ratios.


\(^3\) Data source: NCHS Provisional Death Counts (https://www.cdc.gov/nchs/nvss/vsrr/COVID19/index.htm, accessed 08/06/20). Numbers are unadjusted rate ratios.

CDC.gov
Structural inequities

Vulnerability to COVID-19
- asthma (1.5X risk)
- hypertension (3X)
- obesity (3X)
- diabetes (3X)
- chronic kidney disease (4X)
- older age
- demographic and social factors

Vulnerability to poor air quality, high temperatures
- Chronic lung disease
- heart disease
- obesity
- diabetes
- extremes of age
- demographic and social factors
- environmental exposure
Structural inequities: racism and heat vulnerability

denverpubliclibrary.org

geospatialdenver.maps.arcgis.com
...and building resilient healthcare

From The Call to Climate Action - Medical Society Consortium on Climate and Health 2018

- Invest in strong and equitable systems ...
- Promote social cohesion and build capacity of frontline health and community organizations to respond to climate threats...
- Emphasize nature-based solutions and restoration of ecosystems services that support community health and resilience.
In the Spotlight

- The impact of COVID-19 and the public health emergency
  - Health disparities
  - Social needs
  - Sustainability
Health care’s opportunity
Healthy people living in equitable and resilient communities on a thriving planet.
Audience Poll

- Are environmental drivers or climate strategies currently factored into your organization's approach to addressing social determinants of health?
  - Yes
  - No
  - I don’t know
Understanding the pieces of the puzzle
Henry Ford Health System

- 5-Hospital, Community, Academic, Research Institution, 30+ Medical Centers, Health Insurance (HAP), 200+ sites serving southeast and south-central MI

- Community Health Anchor Council Enterprise-wide (CHANCE) Committee
  - Reports to System Planning and Performance Council (SPPC) up to Executive Council
    - SDOH Workgroup
    - Healthcare Anchor Network (HAN)
    - Community Benefit
    - CHNA
    - Medicaid Strategy
SDOH Workgroup Imperatives

- Scale up **system-wide screenings** for social needs
- Define improved strategies for addressing social needs in our **vulnerable and value-based contract populations**, enabling success in existing and potential future contracts, including Medicaid
- **Support care team workforce** in being responsive to and accountable for addressing social determinants of health
- Recommend/operationalize **financing mechanisms** to create alignment and maximize impact in addressing social need
- Leverage SDOH data for evaluation, research and predictive modeling to **identify and support highest-risk patients**
Healthcare Anchor Workgroup

Align HFHS activities with Healthcare Anchor Network priorities

- Impact Investing
- Local/Diverse Hiring
- Impact Purchasing
  - Minority/Diverse Suppliers
  - Sustainable Procurement
  - Local Purchasing
- Advocacy/Policy focused on SDOH
- Real Estate/Facilities – Community Engagement
Hospitals are required by law to conduct a CHNA and take steps to improve the health of the communities they serve

Hospital organizations described as a 501(c)(3) will not be treated as such unless they:

- Conduct a Community Health Needs Assessment (CHNA) every three years
- Adopt an implementation strategy that has meaningful and measurable health impact on the communities served.

The goal of the CHNA is to describe the major health needs of the communities the hospital/health system serves. It has five major components:

- Commitment to Community Health
- Communities Served
- Assessment of Significant Health Issues within the Communities Served
- External Input – Survey Results of Community Stakeholder Survey
- Recommendations for Community Health Priorities

“The rules make clear that tax-exempt hospitals have to earn their tax exemption.”

- Senator Charles Grassley
Public Health Problems In Detroit: Vulnerable Populations
(Primary Diagnosis 2010-2012)

- Chronic Pulmonary Disease
- Congestive Heart Failure
- Coronary Artery Disease
- Dementia
- Diabetes with End Organ Damage
- Malignant Cancer, Leukemia
- Peripheral Vascular Disease
- Renal Failure
- Severe Chronic Liver Disease
- Obesity
- Mental Health
- Asthma
Health Effects of Pollution

- Asthma & Respiratory Illness
- Heart Disease & Stroke
- Cancer
- Low Birth Weights
- Reproductive toxicant
- Premature Death
- Traffic Safety
- Particulate matter 2.5 can carry pathogen
Reframe: Sustainability as a Solution

- Air pollution/Asthma
- Air pollution, social distancing
- Air pollution/heart disease, infant mortality, COVID-19
- Air pollution, supply chain disruption, Obesity
- Air pollution, supply chain disruption, water quality
- Toxin exposure

- EV – Fleets, Charging stations
- Telework/Telehealth
- Clean/Renewable Energy
- Less Meat, Plant Forward Menus, Local food
- Reusable, not disposable
- Safer Chemicals, Healthier Interiors
Greening of Detroit/IPH
A Healthier and Greener Detroit Project

Public Health Areas of Focus
1. Chronic Respiratory Disease (Asthma)
2. Heat-Related Stress/Mortality
3. Mental Illness

Rationale:
- Numerous, credible studies support the ability of trees to impact these public health conditions
- High rates of each condition in Detroit
- Ability to target areas based on available health and demographic data
Chronic Respiratory Disease

- Studies have shown trees to be a cost-effective solution to removing PM from the air
  - Effectiveness directly related to canopy cover (Escobedo et al. 2008)
- Trees in urban areas are most effective at mitigating public health issues (Nowak et al. 2014)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Continuous US</th>
<th>Urban areas</th>
<th>Rural areas</th>
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<tbody>
<tr>
<td></td>
<td>$ t^{-1}$</td>
<td>$ S \ ha^{-1}$</td>
<td>$ g \ m^{-2}$</td>
</tr>
<tr>
<td>NO$_2$</td>
<td>27</td>
<td>0.15</td>
<td>0.55</td>
</tr>
<tr>
<td>O$_3$</td>
<td>155</td>
<td>8.50</td>
<td>5.49</td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>6587</td>
<td>17.54</td>
<td>0.27</td>
</tr>
<tr>
<td>SO$_2$</td>
<td>8</td>
<td>0.03</td>
<td>0.35</td>
</tr>
<tr>
<td>Total</td>
<td>26.22</td>
<td>6.66</td>
<td>6.73</td>
</tr>
</tbody>
</table>

$^a$ Average annual reduction in hourly concentration in ppb, except for PM$_{2.5}$ (µg m$^{-3}$).

$^b$ Average percent annual reduction in hourly concentration.
Asthma Sensitivity – % Residents 17 years of age and under
Vulnerability = Exposure + Sensitivity
Tree Canopy (2008)
As a Percent of Total Lot Area, by Census Block Group 2000

Sources: Sanborn 2008, Data Driven Detroit: Created September 2012
Moving Forward: Sustainability/Community Benefit Programs

Address social and environmental determinants of health

- Healthier/Greener Homes
  - Screen for issues related to home/neighborhood conditions (Plumbing, HVAC, Lead, Safety, etc.
  - Provide referrals to energy efficiency, lead abatement programs

- Food Insecurity – Henry’s Groceries for Health

- Save the Day Water Fund – Cupanion Fill-it-Forward Water Bottle program to fund plumbing repairs

- Bike Programs – B4E, eBikes -Greener, Reliable, Healthy Transportation
CLINICAL-COMMUNITY CONNECTIONS
HOW THE Y IS RESPONDING

UNDERSTANDING THE PIECES OF THE PUZZLE:
HOW THE Y HAS ADAPTED
YMCA OF THE USA

October 2020
THE Y: ASSOCIATIONS AND BRANCHES

OUR REACH

FACTS

2,700 YMCAs

50 plus states

10,000 communities served

WHERE HOUSEHOLD INCOME IS BELOW THE NATIONAL AVERAGE

58%
IMPACT OF COVID-19 ON THE Y

Ys were among the first to close

- More than $400 million lost operational revenue in April alone
- If conditions don't improve this summer, lost revenue could reach $2.5 billion by August
- Ys laid off or furloughed 75% to 95% of staff

Building closure does not mean the Y is closed

- 1,100+ emergency child care sites
- 1,100+ sites serving meals to food-insecure children, adults, and older adults
- 150+ Ys conducting senior wellness checks (resulting in tens of thousands of check ins each week)
- 250+ blood drive sites
- And more...
YMCA 360 – YMCA360.ORG

YMCA HEALTH & FITNESS VIDEOS

Active Older Adults
As the average life expectancy lengthens there are more years for us to look forward to. Engaging with good health, exercise, and fitness earlier in life is important but you’re never “too old” to start exercising and pursuing a healthier lifestyle that can help prevent, manage, and treat diseases and ailments.
Click here for more information
THANK YOU

Heather Hodge, M.Ed.
Senior Director, Community Health
YMCA OF THE USA
heather.hodge@ymca.net
Denver Health and Hospital Authority
An integrated care network

- 7,000 employees
- 207 public schools served
- ⅓ of all babies born in Denver
- 160 years serving the Denver community+

- Denver Health Medical Center incl
  Correctional Care
  ○ LGBTQ Center for Excellence
- Denver Health Paramedics
- Denver Public Health
- School-Based Health Centers (18)
- Primary Care Clinics (10)

- Urgent Care (3)
- Pharmacies (11)
- Denver CARES
- Outpatient Behavioral Health Services
- ACUTE Center for Eating Disorders
- Rocky Mountain Poison and Drug Control
- Family Health Centers (11)
- Denver Health Medical Plan
- Speciality Clinics - eye, dental, surgical specialities, oncology, palliative care+

Denverhealth.org
Environmental Determinants of Health: Denver and The Front Range
How Is Colorado’s Climate Changing?

A Hotter and Drier Climate

- **Increased Air Temperature**
- **Poor Air Quality**
- **Worsening Drought**
- **More Frequent and Destructive Wildfire**

**A typical Colorado summer day in 2050 will be similar to the hottest days in past 100 years** (under RCP4.5 projection, Western Water Assessment 2015)

**More than 3.5 million Coloradans live in counties that experience one or more unhealthy smog days per year** (NRDC 2018)

**37% (1.9 Million) of Coloradans currently live in drought and the 2000-2014 drought was the worst in 100 years** (Western Water Assessment 2015)

**25% of the fires in Colorado between 1970 and 2012 occurred in the last 2 years of that period while the annual acreage burned increased 10x** (CHI 2017, NRDC 2018)
Environmental Hazards: Front Range

- Extreme Heat
- Poor Air Quality
- Health Systems Stress
- Wildfire
- Mental Health
- Drought
- Infectious Disease
- Extreme Weather and Traumatic Injury
- Economic Stress

An unprecedented global experiment is underway.

**CO₂ measurements from ice core samples**

- 280 in 1813
- 420 in 2100 RCP2.6
- 407 in 2018
- 540 in 2100 RCP4.5
- 625 in 2100 RCP6
- 930 in 2100 RCP8.5

**CO₂ concentrations for RCPs from van Vuuren et al. (2011)**

- = 0.9 - 2.3 °C global mean temperature rise by 2100 (in the setting of aggressive and unprecedented mitigation of global greenhouse gas emissions)
- = 1.7 - 3.2 °C global mean temperature rise by 2100
- = 2.0 - 3.7 °C global mean temperature rise by 2100
- = 3.2 - 5.4 °C global mean temperature rise by 2100 (in the setting of “business as usual” emitting behaviors through the 21st century)

**CO₂ reconstruction from Lüthi et al. (2008)**

**Modern CO₂ measurements from NOAA**

Compiled by Kris Karnauskas (@OceansClimateCU)
Research (in Progress):
Social Determinants of Health, High Temperatures, and Health Outcomes: A Retrospective Cross-Sectional Study

Community Health Assessment:
Environmental Scan

Collaboration through..

Coalition-Building

University of Colorado School of Medicine

Colorado Department of Public Health and the Environment

Denver Public Health

Community Stakeholders

UC4Health: University of Colorado Consortium for Climate and Health
Aim 1: Using a cross-sectional approach, describe the relative risk of living in a heat vulnerable area for Denver Health patients compared to other Denver residents.

Aim 2: Using a retrospective cohort design, assess associations between residential heat vulnerability and urgent/emergent healthcare utilization on high heat days among all Denver Health patients, compared with the same patients’ baseline utilization.

Anticipated outcomes/next steps:
- Measure of association between high heat days and increased healthcare utilization accounting for demographic factors, type and burden of chronic health conditions, and neighborhood heat vulnerability
- Community outreach targeted at preventing heat-related morbidity in high risk groups
Collaboration through Community Health Assessment

*Denver Public Health: Community Health Assessment Survey (2019)*

- **Questions:**
  - What are the most important issues impacting your health and the health of the people you know?
  - How do you define success for your community?
  - What is one priority that you feel often gets overlooked of that should receive more attention to improve health outcomes?

- **Select themes:**
  - The impact of changes in weather and vulnerability to illness
  - Climate change interrelated with transportation planning
  - How a changing climate affects populations and communities differently
  - Respiratory diseases, asthma and air quality
  - Compromised air quality due to too many cars and lack of pedestrian/alternative transport infrastructure
  - Air quality impacting ability to be physically active or participate in outdoor activities

- **Next steps:** Coalition- Building
summary

“The involvement of many parts of society, including government agencies, health organizations, non-governmental organizations, clinicians, the private sector, and communities, is increasingly important for success. Everyone benefits when people are [the environment is] healthier.”

-Thomas R. Frieden M.D., M.P.H.

Frieden TR N Engl J Med 2015:373; 1748-54
Putting the puzzle together
Facilitated Discussion

CLIMATE SUMMIT

WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- ETC. ETC.
Join us next week for our final session

Clinical sustainability: Environmental stewardship at the bedside

Thursday, October 29, 2020 | 2:00 – 3:00 p.m. ET

Learn more and register at CleanMed.org
Chefs, are you ready?

★ Increase sales
★ Entice new customers
★ Improve satisfaction
★ Serve trending plant-forward food
★ Gain celebrity

CONTEST RUNS OCT. 1 - NOV. 30
noharm.org/culinarycontest