Climate & Health News

Newsletter of the JHU-UPF Public Policy Center Climate Change Working Group

OCTOBER 2017

Welcome to the October *Climate and Health News*.

This month we focus on the unprecedented string of extreme weather events in North America, from a record Atlantic hurricane season to still-uncontrolled wildfires on the West Coast – all with enormous impacts on health and wellbeing.

Of special note, see stories on Hurricane Maria's devastating impact on Puerto Rican's health, (including a first-hand account on how storm-linked deaths on the island are likely underreported), the thought-provoking future impact of coastal storms on land-locked regions, and wildfires wreaking havoc on US West Coast cities' air quality.

This month we have also added a section on key new reports with policy implications for population health. Of particular interest is a report by 30 prominent climate scientists and policymakers recommending specific actions to stay within 2°C warming, including scaling up city and local government climate action plans.

New science published last month included a Lancet Commission study that flagged interlinkages of health and other sectors as a major gap, and a review of the US CDC's promising climate and health program for states and cities by members of our own Public Policy Center team.

See you next month…

NEWS

California fires: 31 killed, weather stays dry

The fires that are devastating Northern California have killed 31 people (Oct 13) making it one of the deadliest fires in the state. “We’re not even close to being out of this emergency,” said the Director of California’s Emergency Services. Strong winds are posing particular problems. – *CNN*

A building burns in Napa on October 9. (Noah Berger/San Francisco Chronicle/Polaris)

Why California's firestorm spread insanely fast: 'Diablo' winds, climate trends

Five months of unusually hot and dry weather following the state's record wet winter ensured a ready supply of combustible vegetation. Uniquely hot, dry “Diablo winds” ensured any fire started would spread quickly. Operating just behind the scenes, tilting the odds in favor of more intense fires, is climate change, along with other factors like urban sprawl. – *Mashable*

IMAGE: GOOGLE MAPS

IMAGE: CALIFORNIA HIGHWAY PATROL/HANDOUT/EPA-EFE/REX/SHUTTERSTOCK

In cities, it's the smoke, not the fire, that will get you

Now, in just a single fire season, ash has rained down on Portland, Seattle, San Francisco, and Los Angeles. That might seem like an anomaly—but it's more a portent of the country's new, char-coated normal. As climate-change fuels increasingly large and frequent wildfires that hit closer and closer to densely populated urban centers, the smoke they produce is becoming a public health crisis. -- *Wired*

Smoke rises in the hills east of Napa on October 9. (Michael Short/ San Francisco Chronicle Via AP)

Stark evidence: A warmer world Is sparking more and bigger wildfires

While most wildfires are sparked by humans, evidence is becoming clearer that climate change is contributing to their spread. Globally, the length of the fire weather season increased by nearly 19 percent between 1978 and 2013, thanks to longer seasons of warm, dry weather in one-quarter of the planet's forests. While recently eyes have been on the West coast of the US, the risk of fire has increased on every continent. – *Yale e360*

Weeks after Hurricane Maria much of Puerto Rico still dark and thirsty, a ‘dystopian future’

Hurricane Maria, the second Category 5 storm in the Atlantic season, has left much of Puerto Rico in the chokehold of a frustrating slog toward recovery: 84 percent of the island is without power and many are steeling themselves for six months without it; roughly half of the population has no working cellphone service; 63 percent have clean drinking water and 60 percent of wastewater treatment plants are operating. Concern about outbreaks such as scabies and Zika abound. – *Washington Post*

Neighbors sit on a couch outside their destroyed homes as sun sets in Yabucoa, Puerto Rico, on Sept. 26 — about a week after Hurricane Maria hit. (Gerald Herbert/AP)

Desperation grows in Puerto Rico’s poor communities without water or power.

Public health conditions were deteriorating across Puerto Rico as government agencies struggled to restore basic services such as power and clean drinking water and deliver emergency supplies weeks after Hurricane Maria struck. The situation, dire across much of the island, is even more so for its most vulnerable, low-income minority communities. - *Inside Climate News*

With no running water, Puerto Rico residents in some areas resorted to washing clothes in creeks and drainage ditches. Credit: Ricardo Arduengo/AFP/Getty Images

Maria's dead in Puerto Rico are underreported

The number of deaths resulting from Maria may be much higher than those that have been offered as the official tally. About 70 percent of hospitals were thought not to be operating a week after the storm, while local sources reported that bodies were piling up at morgues, and that those operating were at full capacity while it was unclear what was happening in those that were not operating. – *North Carolina Health News*

Irma Maldanado stands in what remains of her home. Her father has emphysema and uses an oxygen machine, but they had no way of getting medical supplies after Hurricane Maria struck. Credit: Joe Raedle/Getty Images

Photoessay: Maria: Aerial views of devastation in Puerto Rico – Yahoo News

Toa Alta, Puerto Rico-Destroyed communities are seen in the aftermath of Hurricane Maria in Toa Alta, Puerto Rico, Thursday, Sept. 28, 2017. (Photo: Gerald Herbert/AP)

Nate slams Mississippi as the 4th hurricane in an extraordinary year

A Category 1 storm, Nate did not deliver a disastrous punch, in part because it steered clear of New Orleans, which is highly vulnerable to heavy downpours because of its low elevation and an antiquated pumping system that needs repairs. But Biloxi, Miss., and nearby communities took a serious thrashing. – *Washington Post*

After Irma, Barbuda's 300-year old civilization 'extinguished'

Hurricane Irma hit Barbuda as a Category 5 tropical cyclone. The 400 mile-across storm entirely swallowed the 62-square mile island, and laid waste to 95 percent of the island's structures. – *Yahoo News*

Codrington Port, Barbuda Image: DGI Imagery

Commentary: Era of monster hurricanes roiling the Atlantic

The 2017 Atlantic hurricane season appears to be part of one of the most active seasons recorded, according to an AP analysis. While it is premature to draw conclusions on trends, NOAA scientists concur Atlantic storms are strengthening. The triple threat to coastal cities is rising seas, stronger winds and much heavier precipitation. The challenge for public policy is what protections can be put in place. – *AP/ABC News*

Commentary: How many big storms before people abandon coastal cities?

Only two of the world's top 10 biggest cities (Mexico City and Sao Paulo) are not coastal. The others (Tokyo, Mumbai, New York, Shanghai, Lagos, Los Angeles, Calcutta and Buenos Aires) are. Half of the world's 7.5 billion people live within 60 miles of a coastline, and 10 percent of those living in coastal regions are less than 10 meters above sea level. For homeowners in these storm-vulnerable areas the question may become: Rebuild or retreat? Many places in the interior are not equipped to deal with sudden population increases. That means sea level rise isn't just a problem for coastal regions... -- *Salon*

CITIES AND LOCAL GOVERNMENTS

UK Greens aiming for zero emissions city centers by 2023 using public health impact as rationale

The Green Party is challenging five UK cities to achieve zero emissions city centers by 2023, as it seeks to force the Government to tackle the public health crisis that is air pollution. Government figures cite air pollution as a factor in almost 40,000 deaths per year. -- *Independent*

Australia's cities to have 50°C summer days by 2040

Sydney and Melbourne may have unprecedented temperatures reaching 50°C withing several decades even if the Paris target is met. Governments need to start thinking now about how the public transport system would cope, how emergency departments would respond to increased demand from elderly people and others vulnerable to heatstroke, and how energy requirements would be met during peak temperatures. – *The Guardian*

Researchers say that 50C summer days in Sydney could be avoided by limiting global warming to 1.5C. Photograph: Dan

Himbrechts/AAP

As US Federal government retreats, states are joining forces on climate action

US States are stepping up to become bigger climate players: The US Climate Alliance, which has grown to include 14 states and Puerto Rico, plans to collaborate on greenhouse gas-cutting initiatives and boosting communities' resilience to the more damaging natural disasters that are a consequence of climate change, including mapping the risks posed by sea level rise, storm surge, and extreme precipitation. – *Yale e360*

Washington Governor Jay Inslee (center) flanked by then-Vermont Governor Peter Shumlin (left) and California Governor Jerry Brown at the Paris climate summit in 2015. COP PARIS/FLICKR

NEW POLICY AND RESEARCH REPORTS

Without concerted action, climate change could threaten most of the world's human population by 2100

according to two key new reports. The first study finds there is already a 1 in 20 chance that current levels of atmospheric CO_2 may cause warming 5°C or more above preindustrial levels. Using these findings, the second report suggests policy steps to contain warming within a 2°C increase, from greater reliance on subnational government action to a sharp pivot to wind and solar energy and electric cars. – *Scientific American*

World hunger again on the rise, driven by conflict and climate change

After steadily declining for over a decade global hunger is on the rise, affecting 815 million people in 2016 (11% of world population). The increase – 38 million more people than the previous year – is largely due to the proliferation of violent conflicts and climate-related shocks, according to a new UN Food and Agriculture

Organization report. – WHO Media Center

Natural disasters are likely to become more destructive in the Asia-Pacific region, where an individual is already five times more likely to be affected than in other regions, the United Nations warned in a new report. Home to 60 percent of the world's population, Asia-Pacific is the planet's most disaster-prone region. The report urges countries to invest in resilience plans. – Thomson Reuters

Garbage fills part of a flooded street in a slum area of Jamshed town in Pakistan's southern port city of Karachi, Aug. 30, 2017. Thomson Reuters Foundation/Saleem Shaikh

Commercial airliners will be buffeted by three times more turbulence, increasing risk of mid-air injuries according to a new report. Clear air turbulence, difficult to detect with radar, is already on the rise, and is exacerbated by climate change. – Telegraph (UK)

SCIENCE

POLICY AND PRACTICE

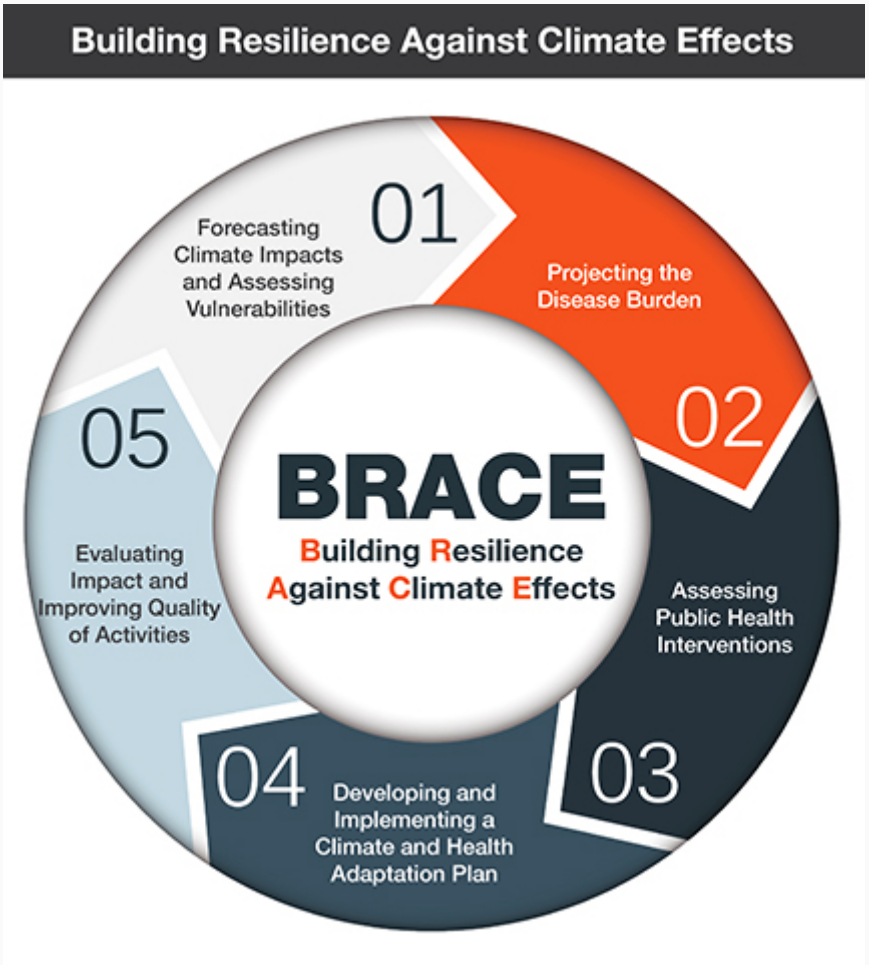
Addressing challenges to human health in the Anthropocene epoch-an overview of the findings of the Rockefeller/Lancet Commission on Planetary Health

The report of the Rockefeller Foundation/Lancet Commission on Planetary Health described how human health is affected by global environmental change (with climate change the most critical of these changes). The report identifies three challenges: (i) need for better metrics than GDP for assessing human progress; (ii) lack of

knowledge on the interlinkages between environmental change and health and the effectiveness of potential solutions; and (iii) translating science to policy and practice.

Integrating Health into Local Climate Response: Lessons from the U.S. CDC Climate-Ready States and Cities Initiative

We reviewed climate health profiles of 16 states and two cities participating in the US Centers for Disease Control and Prevention (CDC)'s Climate-Ready States and Cities Initiative (CRSCI) that aims to build local capacity to assess and respond to the health impacts of climate change. We found that CRSCI has strengthened climate preparedness and response in local public health agencies by identifying critical climate-health impacts and vulnerable populations, and has helped integrate health more fully into broader climate planning.



Source: CDC

EXTREME HEAT

The Heat Exposure Integrated Deprivation Index (HEIDI): A data-driven approach to quantifying neighborhood risk during extreme hot weather

Mortality attributable to extreme hot weather is a growing concern in many urban environments, and spatial heat vulnerability indexes are often used to identify areas at relatively higher and lower risk. Three indexes were developed for greater Vancouver, Canada using a pool of 20 potentially predictive variables categorized to reflect social vulnerability, population density, temperature exposure, and urban form. The Heat Exposure Integrated

Deprivation Index (HFIDI) approach produced a graduated map of vulnerability, whereas the other approaches primarily identified areas of highest risk.

The mortality burden of hourly temperature variability in five capital cities, Australia: Time-series and meta-regression analysis

Unstable weather, such as intra- and inter-day temperature variability, can impair the health and shorten the survival time. Ten-year (2000-2009) time-series data on temperature and mortality were collected for five largest Australia's cities (Sydney, Melbourne, Brisbane, Perth and Adelaide). We found evidence of significant associations between temperature variability and mortality in all cities assessed. Meta-regression analyses indicated that the mortality risk could be influenced by city-specific factors: latitude, mean temperature, population density and the prevalence of several chronic diseases.

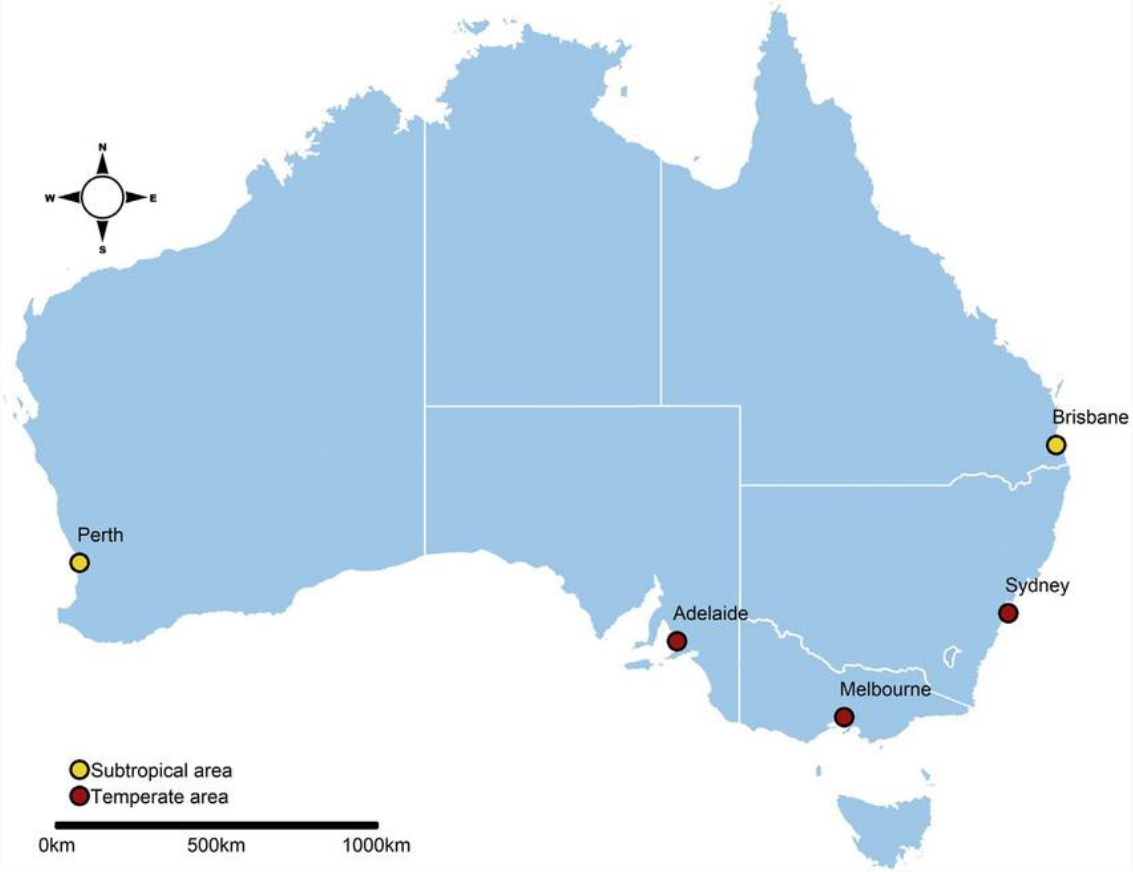


Fig. 1. Map of the five largest cities in Australia. White lines are the border lines of different states; Climate zone for each study is based on Köppen classification method.

Ambient temperature and risk of cardiovascular events at labor and delivery: A case-crossover study

Extreme ambient temperatures are linked to cardiac events in the general population, but this relationship is unclear among pregnant women. We identified 680 women with singleton deliveries affected by cardiovascular events across 12 US sites (2002-2008). Small changes in temperature appear to affect the risk of having cardiovascular events at labor/delivery. Black women had a differentially higher warm season risk. These findings merit further investigation.

The association between ambient temperature and the risk of preterm birth in China

Temperature exposures and birth outcomes of 1,020,471 pregnant women from 132 cities in China were investigated. Compared with moderate temperatures (5th to 95th percentile), heat exposure (>95th percentile) in different periods of pregnancy increased the risk of preterm birth in hot areas. The most obvious increase was during the 3 months before pregnancy (odds ratio (OR)=1.229, 95% confidence interval (CI): 1.166-1.295).

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