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Climate Change and Our Health

December 21, 2016

Without question our county ranks as one of the least healthful and least well counties in the state. A host of rating agencies affirms this using, as evidence, such outcomes as our rate of infant mortality and preterm birth, our prevalence of obesity and diabetes, the percentage of us reporting higher numbers of poor physical health and poor mental health days, and our increased years of potential life lost to a variety of causes of premature death.

From where I sit, if you trace the causes of these poor outcomes back far enough, you will find that they are rooted in our extreme and concentrated poverty and our incredibly poor air quality.

Extraordinary work has begun, and huge gains have been made, here recently in the coalescence and focus of numerous collaborations and collective impact activity to address these poor outcomes. But I'd like to discuss a factor, which if not addressed in these efforts, is bound to delay or reverse any progress in improving the aforementioned health outcomes.

That factor is climate change.

The United Nations Intergovernmental Panel on Climate Change (IPCC) has concluded that "Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising of global average sea level."¹ Other climate consequences of this global warming are seen in documented changes in rainfall and the change in location and incidence of extreme weather events.¹

Certainly the two primary greenhouse gases (water vapor and carbon dioxide) trap heat in the atmosphere and keep our planet habitable. But the dramatic increases in carbon dioxide (spawned by our reliance on fossil fuels since the onset of the Industrial Revolution) are causing changes in climate (from the ensuing warming) that threatens our individual and collective health in many ways.

Obvious direct health effects include heat–stress related illness and death (including dehydration, heat exhaustion, heat stroke, and exacerbation of chronic illnesses) and injury, as well as, death from extreme weather events.

Indirect health effects from global warming and climate change include:

1. Increased morbidity and mortality from lung disease and cardiovascular disease resulting from the increases in both ground level ozone (deriving from the increased atmospheric temperatures) and particulate matter (as severe drought and warmer temperatures lead to increases in frequency and intensity of wildfires)
2. Increased death from food insecurity and malnutrition resulting, again, from drought and weather extremes
3. Increased illness and death from infectious diseases arising from expanding hospitable environments for mosquitoes, ticks, and other climate–sensitive vectors of diseases such as malaria, chikungunya, dengue, yellow fever, Zika virus, and Lyme disease, and from increasing opportunities for water contamination
4. Increased suffering from allergic and respiratory symptoms as the pollen season is extended due to increased temperatures and frost–free periods, and pollen and spore containing dust is dispersed into new areas by changing weather patterns (an example being Valley Fever)
5. Increased mental health morbidity as rising temperatures cause higher rates of aggression and violent behavior; prolonged drought leads to suicide among individuals totally dependent upon agriculture for economic viability; increased intensity and frequency of weather disasters lead to post–traumatic stress disorder, adjustment disorders, and depression; and increased social stress, acculturation stress, and decreased social capital secondary to forced population migration lead to even more significant psychiatric disorders.

The World Health Organization (WHO) estimates that climate change is already linked to 150,000 deaths each year¹, and further estimates that this will increase to 250,000 deaths per year from 2030 to 2050.²

“According to surveys, many physicians believe they are already seeing patients for illness that may be connected to climate change. A survey of American Thoracic Society members found that 77% of respondents believed that increases in severity of chronic illness resulted from increased air pollution caused by climate change. In a survey of allergists in the American Academy of Allergy, Asthma, and Immunology, 63% indicated that their patients had increased allergic symptoms associated with climate change.”²

Particularly pertinent to our Valley is that, while all Americans are facing increased risks from climate change, high percentages of individuals living here are at increased risk and will be disproportionately impacted. This includes people living in poverty, people without air conditioning, outdoor workers, and people with chronic illness.

Additionally, we are very much more at risk due to the bowl–like topography of our environment, the tenuous nature of our water supply, and our economic dependence upon agriculture.

The Lancet Commission on Health and Climate Change states that addressing climate change could be the greatest global health opportunity of the century.²

We in Fresno County and the Valley cannot afford to ignore climate change and its health consequences. Our response must be two–pronged, with (1) primary prevention in the form of mitigation and (2) secondary prevention in the form of adaptation.

This will, of course, require the concerted effort of all [Eight Pillars of Public Health](#) as we work together to mitigate the effects of climate change by such actions as:

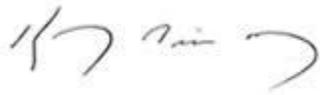
- Moving away from fossil fuels
- Improving community design toward alternative and active transportation
- Urban tree planting
- Improving water use efficiency
- Diversifying the power supply
- Continuing cap and trade or maintaining a carbon pricing system
- Shifting to less meat intense diets
- Communicating with our legislative representatives, urging them to take action on these matters

and to adapt to the effects of climate change by such actions as:

- Development of local needs assessment
- Directing surveillance and monitoring systems toward anticipation of climate change impacts
- Strengthening weather advisories
- Identifying local vulnerabilities and planning for same

Many of these activities would, in and of themselves, lead to improved individual and community health, even if climate change was not at issue. We have nothing to lose in implementing them.

Here's to your health!



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Citations:

- 1) https://www.apha.org/~media/files/pdf/factsheets/climate_change_guidebook.ashx
- 2) <http://annals.org/aim/article/2513976/climate-change-health-position-paper-american-college-physicians>