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Planetary health and the 2020 US election

Published Online
September 29, 2020
[https://doi.org/10.1016/S0140-6736\(20\)32038-9](https://doi.org/10.1016/S0140-6736(20)32038-9)

Elections impact health through changes in both health-care delivery¹ and upstream social and environmental policies. The upcoming US election presents stark contrasts in environmental policies that will affect health in the USA and globally. Here we examine these contrasts through the lens of planetary health.²

A hallmark of the current US administration has been its hostility to environmental stewardship and its embrace of an antiregulatory agenda. President Donald Trump has appointed administration officials from the ranks of polluting industries and their lobbying firms;³ eviscerated some key government agencies;⁴ and diluted or overturned environmental regulations (table). Notably, Trump has called climate change a hoax and has cast doubt on established science.⁵ The Democratic presidential candidate, Joe Biden, has stronger pro-environmental positions as evidenced by the actions of the Obama administration in which he served and by his published 2020 election platform on a clean energy revolution and environmental justice.⁶ The candidates' environmental policy positions to date are outlined in the table.

Climate change policy provides one of the sharpest distinctions between Trump and Biden. Climate change has extensive health implications through pathways that include severe weather events, infectious disease spread, hunger and reduced nutrition, mental health effects, and forced migration and conflict.⁷ The Trump administration's denial of climate science, withdrawal from the Paris Accords, and dismantling of climate policy increase the risk of these outcomes in the USA and globally.^{8,9} By contrast, Biden's proposed climate change policies would

be expected to yield health benefits; mitigation action delivers health co-benefits^{10,11} and adaptation, such as disaster planning, heatwave preparedness, and planned relocation, can reduce human suffering.^{12,13}

The growing field of planetary health makes clear that other areas of environmental policy impact on health.² Protection of terrestrial and marine biodiversity may limit infectious disease exposure, promote mental health, facilitate pharmaceuticals discovery, and improve nutrition.¹⁴ Protecting the recreational, cultural, and spiritual value of access to undisturbed public lands has a role in supporting mental and physical health.^{15,16} Safeguarding human health from pollution of air, water, and soil was a core reason for establishing the US Environmental Protection Agency (EPA) in 1970, and the Trump administration's weakening of these safeguards puts Americans at increased risk of cardiorespiratory disease, endocrine and neurobehavioural abnormalities, and some cancers.¹⁷

Some of the health consequences of post-election environmental policies will be felt in the near term, whereas others will be delayed. For example, adaptation actions such as pandemic preparedness are expected to be stronger under a Biden presidency than under a Trump presidency, as shown by the current administration's COVID-19 response. Action to reduce emissions from power plants and motor vehicles can yield reduced air pollution, and health benefits, within months to years. But some health benefits of policies that conserve land, water, and biodiversity will only manifest over many years.

The environmental policies that are pursued after this election will be felt in the USA and globally. Actions to protect rivers and streams, for example, will mainly benefit those in the affected watersheds, and continued soil loss will compromise local agriculture. But persistent toxic chemical emissions do not remain in place;¹⁷ they circulate globally in processes that are accelerating with climate change.¹⁸ The health implications of promoting versus obstructing climate action will be felt worldwide and across future generations.

Although a Biden presidency would be expected to advance planetary health more than a second Trump term, there are likely to be limits to these benefits. First, Biden's policies do not go far enough for many environmentalists. For example, unlike some of his opponents in the Democratic Party presidential primary race, Biden has stopped short of promising to ban fracking, despite its direct and indirect adverse health effects.¹⁹ Critics have pointed to Biden's continued

reliance on advisers associated with the Obama administration's "all of the above" energy strategy, some with links to the fossil fuel industry.²⁰ Second, although the US President has considerable power through agency appointments and executive orders, legislative solutions and budgeting rest with the US Congress. A Republican majority in either or both houses of Congress could stymie progress. Third, many US environmental policies face legal challenges and Trump has established a highly conservative judiciary.

This is a fraught historical moment. In the months leading up to the 2020 election, fires have consumed more than 7 million acres of western forests in the USA. Hurricanes in the Atlantic and the Gulf of Mexico led to the deaths of over 100 Americans in states from North Carolina to Texas, and caused more than US\$20 billion in damages.²¹ Efforts to move people to safety from these disasters have been hampered by the COVID-19 pandemic.

| | Trump record | Biden platform |
|---------------------------|--|--|
| Energy | Weakened power plant greenhouse gas emission rules; permitted controversial new oil pipelines; lowered barriers to fossil fuel development; weakened methane and volatile organic compound emission rules at drill sites; weakened energy conservation standards for household and commercial appliances | "Ensure the US achieves a 100% clean energy economy and reaches net-zero emissions no later than 2050"; would strengthen vehicle fuel economy standards; nationwide programme of energy efficiency in buildings; supports "a worldwide ban on fossil fuel subsidies" |
| Water | Rolled back offshore drilling safety rules; removed protection on marine national monuments; rolled back Clean Water Act provisions that protected rivers and streams | Would ban new oil and gas permitting in public waters; would make water infrastructure a top priority including monitoring contaminant levels, and holding polluters accountable |
| Land | Weakened wetlands protection; opened more federal land for oil and gas exploitation, mining, and logging; reduced enforcement of illegal grazing on public lands | Would ban new oil and gas permitting on public lands; permanently protect Arctic National Wildlife Refuge; advocates reforestation of public lands |
| Biodiversity | Reduced wildlife protections; weakened Endangered Species Act | "Protecting biodiversity, slowing extinction rates and helping leverage natural climate solutions by conserving 30% of America's lands and waters by 2030" |
| Food and agriculture | Withdrew organic livestock animal welfare rule; exempted combined animal feed operations from hazardous substance release reporting requirements | "Invest in climate-friendly farming such as conservation programs for cover crops and other practices aimed at restoring the soil and building soil carbon, and in the process, preventing run-off and helping family farmers deploy the latest technologies to maximize productivity" |
| Chemical pollution | Blocked or weakened regulations of power plant mercury and other toxic emissions, chlorpyrifos, and other chemicals; weakened rules on coal ash waste | Pledges to strengthen enforcement of pollution rules, especially in disproportionately impacted communities |
| Transport | Cut funding for rail, urban transit, and pedestrian and bicycle infrastructure, while heavily funding highways; weakened vehicle fuel efficiency standards; revoked California's right to set strict vehicle emission standards; exempted oil refiners from biofuel blending requirements | Supports local solutions for transit and pedestrian and bicycle infrastructure; pledges a "second great railroad revolution" with substantial expansion of rail infrastructure; would accelerate deployment of electric vehicles through charging infrastructure and tax credits |
| Role of science | Weakened and/or disbanded science advisory groups; defunded NASA monitoring of carbon emissions; proposed EPA transparency rule precludes use of much health evidence in policy making | Declared commitment to "science, not fiction" |
| International cooperation | Withdrew from Paris Agreement; ended US funding for WHO; reinstated Mexico City Policy ("global gag rule"), blocking US funding of NGOs that provide abortion services or advocate for abortion | Pledges to lead global efforts to ramp up climate targets; would rejoin Paris Agreement; would promote low-carbon international development aid; would withdraw Mexico City Policy |

EPA=Environmental Protection Agency. NGOs=non-governmental organisations. Extended table and sources are in the appendix.

Table: Illustrative environmental policies of Trump (2017–20) and Biden (projected) administrations

See Online for appendix

These emergencies arise in the context of the larger global climate emergency. According to the Intergovernmental Panel on Climate Change, the window for reductions in greenhouse gas emissions to avoid catastrophic climate change is rapidly closing.²² Similarly, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services warns that there is only a short time to act on threats to biodiversity.²³ Continued reliance on fossil fuels, destruction of ecosystems, dissemination of persistent toxic chemicals, and other environmental depredations—many of them permitted, if not promoted, during the Trump presidency—are inconsistent with a healthy future for humanity. The alternative is a transition to ways of living that protect both natural systems and the health of current and future generations. This path requires new approaches to generating energy, producing and consuming food, chemicals, and other manufactured goods, travelling, and designing and building cities. The vast public investments some governments are making during the COVID-19 pandemic could spur this transition,²⁴ and US leadership could be catalytic. The outcome of the US election will have far-reaching consequences for planetary health.

We declare no competing interests.

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Confronting antimicrobial resistance beyond the COVID-19 pandemic and the 2020 US election

Published Online
September 29, 2020
[https://doi.org/10.1016/S0140-6736\(20\)32063-8](https://doi.org/10.1016/S0140-6736(20)32063-8)

Globally, the USA has recorded the highest number of COVID-19 cases and deaths,¹ and still needs to simultaneously respond to another looming potential pandemic. The rise in multidrug-resistant bacterial infections that are undetected, undiagnosed, and

increasingly untreatable threatens the health of people in the USA and globally. In 2020 and beyond, we cannot afford to ignore antimicrobial resistance (AMR).

Bacterial infections unsuccessfully treated due to AMR claim at least 700 000 lives per year worldwide and are