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By Mariana C. Arcaya and José F. Figueroa

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COMMENTARY

Emerging Trends Could Exacerbate Health Inequities In The United States

Mariana C. Arcaya (marcaya@mit.edu) is an assistant professor of urban planning and public health in the Department of Urban Studies and Planning, Massachusetts Institute of Technology, in Cambridge.

José F. Figueroa is an instructor of medicine at Harvard Medical School and an associate physician in the Department of Medicine, Brigham and Women's Hospital, in Boston, Massachusetts.

ABSTRACT Health inequities among people of different races and ethnicities, geographical locations, and social classes are not a new phenomenon, although the size of the inequities has changed since researchers first began documenting them. While interventions to improve the health of targeted disadvantaged groups may help combat disparities, broader trends that disproportionately benefit privileged groups or harm vulnerable populations can eclipse the progress made through isolated interventions. These trends threaten equity in health and health care in the United States either through direct effects on health or through impacts on the distribution of resources, risks, and power. We highlight trends in four domains: health care technologies, health reform policies, widening socioeconomic inequality, and environmental hazards. We suggest ways of countering the effects of these trends to promote health equity, focusing on strategies that promise co-benefits across multiple sectors.

Health inequities between people of different races and ethnicities, geographical locations, and social classes have been documented in the United States since at least the mid-1800s.^{1,2} Unlike the consistent long-term trends that show overall improvements in US population health, the magnitude of disparities in health has changed over time. For example, in the period 1960–2002 racial/ethnic and socioeconomic disparities in health narrowed from 1966 through 1980 but widened after that.³ Evidence suggests that health disparities have increased in recent years, with some groups—including middle-aged whites—even experiencing a decline in life expectancy.^{4–6} Interventions to improve the health of disadvantaged groups have been shown to mitigate disparities.⁷ However, progress made through isolated interventions can be eclipsed by broader trends that disproportionately benefit privileged groups or harm vulnerable popu-

lations.

In this article we highlight several trends that threaten to exacerbate health disparities in the United States in the coming years. Because we cannot empirically investigate future causes of health disparities, we focus on trends that have been shown to help explain current gaps in health, and trends with strong theoretical relevance to health disparities through impacts on the distribution of resources, risks, and power in society.⁸ Thus, threats to equity in health and health care include not only hazards that disproportionately threaten vulnerable populations, but also innovations that unevenly benefit privileged groups. We emphasize trends that are already under way and that affect large numbers of people. These trends fall into four domains: health care technologies, health reform policies, widening socioeconomic inequality, and environmental hazards.

In many cases, addressing emerging challenges to health equity could create opportuni-

ties to reduce health disparities, while simultaneously creating co-benefits that address urgent problems across multiple sectors.

Emerging Health Care Technologies

Technological progress against diseases—for example, in the form of new drugs, diagnostics, or devices—can widen disparities in the likelihood of survival between patients with high versus low socioeconomic status.^{9,10} Personalized medicine (also known as precision or genomic medicine) uses information about a person's genome to diagnose and treat disease, and it will likely deliver breakthroughs in clinical care¹¹ that disproportionately benefit privileged groups. This is the case for several reasons: First, racial and ethnic minority populations are underrepresented in the foundational studies that undergird translational research efforts in personalized medicine,^{12,13} which means that technological advances may be less effective in meeting the needs of these populations. Second, the cost of precision medicine¹⁴ is likely to limit access for poorer patients. Finally, enthusiasm for personalized medicine itself may be a threat to health equity, with investment in genomic research crowding out funding to address the social determinants of health disparities.¹⁵

Similarly, health technologies such as telehealth or wearable devices that monitor physical activity, diet, sleep, and vital signs threaten to unevenly benefit patients with high socioeconomic status. Hospitals that disproportionately serve minority populations—which already provide lower-quality care, compared to hospitals serving fewer minorities¹⁶—face greater challenges in adopting health information technology (IT) than do high-performing, well-resourced academic medical centers.¹⁷ At the patient level, expensive wearable devices have become common among wealthier and healthier patients,¹⁸ although evidence on the benefits of wearable devices remains mixed.^{19,20} Seniors, adults with low education, and the poor are less likely to have access to IT and the Internet (a phenomenon known as the digital divide²¹), which suggests that these groups may be the first to fall behind as wearables and other health technologies become more sophisticated and actually lead to better health.

Health Reform Policies

Before passage of the Affordable Care Act (ACA), the United States had an uninsured population of about fifty million and ranked last among industrialized nations in terms of providing affordable and accessible health care.²² The ACA

has helped over twenty million people gain health insurance, largely as a result of expanded eligibility for Medicaid in thirty-two states—which provided coverage for eleven million new enrollees.²³ Crucially, Medicaid expansion drastically reduced racial and ethnic disparities in coverage. For example, uninsurance rates dropped by 3 percentage points for whites but by over 7 percentage points for Hispanics and 5 percentage points for blacks.²⁴

The administration of President Donald Trump aims to repeal and replace the ACA and has ample opportunity to weaken its key provisions.²⁵ If the Medicaid expansion were reversed—which is among the policy options being discussed in Congress—that would jeopardize access to care among the poorest, and often sickest, patients. Medicaid can protect low-income, uninsured people from financial debt,²⁶ and a complete reversal of the expansion would likely exacerbate disparities in financial security between people of low versus high socioeconomic status. As a result, a reversal of Medicaid expansion could indirectly affect health through increased stress and material deprivation. In the longer term, reducing access to Medicaid for the children of low-income adults jeopardizes the children's health and labor productivity as adults and increases future dependence on government assistance programs.²⁷

Another ACA provision prohibits health insurance companies from pricing plans differently for or denying coverage to people with preexisting conditions, who account for 27 percent of nonelderly US adults and are disproportionately members of racial and ethnic groups.²⁸ Repealing this provision would leave people with preexisting conditions uninsurable, or insurable only at high cost to them. Finally, hospitals stand to lose the income generated by newly insured patients. Therefore, any future health care reform that reverses gains in insurance coverage might cause safety-net hospitals to incur financial burdens in providing more uncompensated care.²⁹

Widening Socioeconomic Disparities

While technological advances and changes in health policy have obvious implications for health equity, changes in the way wealth is generated and to whom it accrues likely have larger, if less intuitive, implications for health disparities.

FINANCIALIZATION OF THE ECONOMY The US economy is becoming increasingly “financialized,” which means that financial markets play an unprecedented role in the activities of corporations, local governments, and even the lives of

ordinary Americans.^{30,31} Financialization alters the distribution of resources, risks, and power in society⁸ in a way that benefits privileged groups, exacerbates wealth inequalities, concentrates existing political power, and reduces the ability of trusted and accountable institutions, such as local governments, to manage social and environmental problems.^{30,32} For example, even nonfinancial firms now generate a growing share of their earnings through financial investments rather than through production, and as a result, corporations can turn profits without always needing to hire full-time workers or purchase productive assets.^{30,31} In interpreting their findings of increasing white mortality between 1999 and 2013, Anne Case and Angus Deaton note that US workers are now exposed to unpredictability in financial markets through their retirement accounts,⁴ which are a shift away from the more secure pensions of the past.³⁰ Some effects of financialization, such as increasing wage premiums associated with working in management or finance, unevenly benefit white men while disproportionately harming women and members of racial and ethnic minority groups, in part because of the stratification of the US labor market and gender- and race-based disparities in financial security.³²

THE FUTURE OF WORK Innovations in computing, including machine learning and artificial intelligence, are projected to put roughly 47 percent of US jobs at risk within the next twenty years,³³ and roughly two billion jobs may be lost globally to such innovations by 2030.³⁴ Although new opportunities are expected to replace many, if not all, of these jobs,^{35,36} a huge segment of the workforce will be affected by rapid and dramatic changes in the type of work available.

Economists have shown that automation diminishes the demand for workers who perform routine tasks, while enhancing the demand for workers with skills that computers do not yet have. As a result, workers in routine, low-wage jobs that require less education (including driving trucks, doing clerical work, and working in call centers) are thought to be most imminently at risk,³³ while workers with high-level skills are making greater strides than ever before. Work provides financial benefits and serves nonfinancial functions that benefit health, including those related to status formation, interpersonal contact, and self-esteem.³⁷

SUMMING UP THE FINANCIAL CONTEXT Financialization and computerization may synergistically widen socioeconomic inequality, especially against a backdrop of trade liberalization (the removal of restrictions on free trade between nations), which itself has been linked to increased rates of substance use and suicide.³⁸

Threats to equity in health and health care include innovations that unevenly benefit privileged groups.

The US economy now faces historically high levels of socioeconomic inequality, with profound effects on the very structure of society and the ability of marginalized populations to mobilize for change. For example, new data suggest that the United States operates more like a civil oligarchy dominated by economic elites than like a majoritarian electoral democracy, and that “the preferences of average Americans appear to have only a minuscule, near-zero, statistically non-significant impact on public policy” after the preferences of elites and interest groups are accounted for.³⁹

Environmental Hazards

Vulnerable populations are also more likely than privileged populations to be exposed to environmental health hazards. While environmental injustices and the health consequences of their complex interplay with social disparities have been recognized for decades,⁴⁰ we note next two emerging trends that warrant scrutiny.

NEW CHEMICAL RISKS AND PRECAUTIONARY CONSUMPTION The past fifty years have seen exponential, 420-fold growth in the number of chemical compounds that are isolated or synthesized by industry, with a new substance added to the Chemical Abstracts Service Registry database every 2.5 minutes on average over the past fifty years.^{41,42} New and old chemicals—even those produced in extremely high volumes—have poorly understood health impacts, particularly with respect to cumulative, life-course, and interactive effects.^{43,44} A growing number of pollutants—including those once thought safe, such as bisphenol A—are being shown to act as endocrine disruptors at even low doses.^{45,46} Furthermore, the current regulatory environment generally assumes that chemicals are safe until proven otherwise, which can mean that substitutes for harmful chemicals are as dangerous as the substances they replace.^{43,46}

Levels of endocrine-disrupting chemicals and their residues detected in the body have been

A reversal of Medicaid expansion could indirectly affect health through increased stress and material deprivation.

shown to differ by social group for some compounds.⁴⁷ People with high socioeconomic status have higher urinary concentrations of some potentially harmful endocrine-disrupting chemical metabolites, compared to people with lower socioeconomic status.^{48,49} However, a “fundamental cause” perspective reminds us that gradients in exposures to the most harmful chemicals are likely to change over time as information about endocrine-disrupting chemicals evolves.⁵⁰

Precautionary consumption, or the attempt to protect oneself against ubiquitous environmental threats through changing one’s consumer behavior, has become a common response to the identification of new chemical risks.⁵¹ But precautionary consumption promises to protect only those who have the education and means to reduce their personal chemical exposure, which means that any limited effectiveness in protecting health will only exacerbate health disparities.^{52,53}

GLOBAL CLIMATE CHANGE The World Health Organization conservatively estimates that global climate change is poised to kill roughly 250,000 people annually by 2030.⁵⁴ Climate change causes more frequent and intense storms and flooding, fires, heat waves, and drought, and it leads to serious population health risks such as food insecurity, violence, political conflict, mass displacement, growth in the geographic range of some disease vectors, and increased particulate pollution.^{55–57} The people least responsible for the problem—the poorest, most socially vulnerable, and sickest members of society—bear the brunt of adverse climate impacts and will continue to do so going forward.^{58,59}

Discussion

Addressing processes that disproportionately threaten vulnerable populations or benefit privileged groups requires both targeted and cross-cutting approaches. As discussed below, we rec-

ommend steps to ensure that new technologies reach vulnerable populations, guarantee affordable access to health care for the poor and people with preexisting conditions, protect Americans from widening socioeconomic inequalities and prepare low-skill workers for the new economy, understand and regulate chemical risks, and address climate change. Cross-sector solutions may be particularly efficient.

TARGETED RECOMMENDATIONS To ensure that new technologies reach vulnerable populations, genomics and health IT research should include more participants with low socioeconomic status and from racial and ethnic minority groups. Payers should experiment with subsidizing effective wearable technologies for patients with low socioeconomic status, and the federal government should provide sufficient funding for safety-net hospitals to adopt effective new health care IT.

To ensure equitable access to care, the ACA must not be repealed without the implementation of a replacement plan that ensures access to affordable health insurance for the poor and people with chronic or preexisting conditions. Any proposed reforms should not revoke coverage for people who gained insurance under the Medicaid expansion.

To protect Americans from widening socioeconomic disparity and prepare low-skill workers for the new economy, all levels of government should increase investments in factors that facilitate social mobility.⁶⁰ Public education, transit infrastructure, environmental protection, tax credits for low-income families, and public health systems, among other measures, can reduce disparities in resources and risks. The federal government has unique power to require changes in the way that financial institutions structure executive pay,⁶¹ or how investment and commercial banks are separated from each other. For-profit firms may have a role as well—for example, by providing insurance contracts that mitigate the risk from job loss due to automation.⁶²

Researchers should continue developing better methods to assess chemical threats, and the federal government should require more stringent chemical safety testing protocols and stronger regulation of harmful chemicals.^{43,51,52,63} Federal funds for the Environmental Protection Agency and other agencies to enforce chemical regulation should not be reduced.

Lastly, the United States must act immediately to reduce greenhouse gas emissions and implement climate change adaptation plans. States and cities are likely to be important leaders in this work in the short term.⁶⁴ Cities should implement strategies for managing health risks as-

sociated with frequent and powerful storms, coastal erosion and flooding, heat waves, drought, and climate-related migration.

CROSS-SECTOR SOLUTIONS AND CO-BENEFITS

Particularly efficient solutions may lie in coordinated efforts to address simultaneously the direct effects and negative externalities associated with the aforementioned emerging threats to health equity.

Clinicians and public health departments could leverage existing health IT for climate change purposes—for example, by using electronic medical records to identify which vulnerable patients are at risk during heat waves or natural disasters and to coordinate emergency support. Although technological innovations threaten low-wage jobs, they also enable better measurement of energy usage or greenhouse emissions, which could help governments levy carefully calculated taxes to discourage greenhouse gas emissions while raising revenue that could help fund services and infrastructure that promote social mobility, such as education, transit infrastructure, or public health systems.⁶⁵

Finally, investing in research on subjects such as renewable energy, safer alternatives to endocrine-disrupting chemicals, and carbon sequestration (a process by which carbon dioxide is removed from the atmosphere) could simultaneously create jobs, reduce harmful chemical exposures, and combat climate change.

A TIME FOR ADVOCACY Ensuring that positive innovations benefit American families equitably without unjustly exposing vulnerable groups to unhealthy negative externalities requires economic and political change. Actions that we have highlighted above as particularly effective against widening health disparities—including increased investments in education and health care for the poor, stronger financial and environmental regulation, and decisive action on climate change—are directly opposed by the Trump administration. We urge community-based organizations, researchers, and clinicians to form policy advocacy coalitions organized around a health equity agenda that includes sustained attention to the underlying inequalities in social, economic, and environmental exposures that drive health disparities, despite the current atmosphere of excitement about the high-tech health revolution;¹⁵ the design and testing of new technologies, financial products, and other

Advocates for health equity should come together to support a new cross-sector health equity agenda.

innovations in partnership with marginalized communities to ensure that research and innovation benefit vulnerable groups; stronger regulation of industries that release environmental toxicants or toxic financial products into the environment; increased political power for marginalized groups to lower overall levels of social inequality; and research on how social and environmental exposures interact to reproduce or stem health inequalities. Progress on these issues will not be made without sustained advocacy by researchers, clinicians, community organizations, and ordinary citizens.

Conclusion

Emerging innovations in health care technologies, changes in health policies, widening socioeconomic inequality, and increasingly serious environmental hazards are likely to exacerbate health disparities over time unless deliberate, equity-promoting responses are pursued. While our list of salient trends is necessarily incomplete, inequitable distributions of risks and benefits associated with technological advances; unacceptable levels of wealth and power inequalities that marginalize vulnerable populations; and insufficient medical, financial, social, and environmental protections for citizens also play a role in other emerging social challenges, including housing and caring for an aging population and responding to humanitarian crises and associated mass migration events. Advocates for health equity should come together to support a new cross-sector health equity agenda to simultaneously tackle health care disparities, rising social inequality, and environmental threats. ■

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