

Colonial Neglect and the Right to Health in Puerto Rico After Hurricane Maria

The humanitarian crisis revealed as a result of Hurricane Maria in Puerto Rico demonstrates a long history of US colonial neglect and human rights violations. This reality has made it especially difficult for the people of Puerto Rico to achieve their right to the highest attainable standard of health.

The impacts are pervasive, resulting in disparities in Puerto Rican health, including water access and quality; wealth, including economic loss and disinvestment; and sustainability of the island's resources. As a result of failed governmental protection and support, public health issues related to access to care, a failing infrastructure, and discrimination all contributed to crisis on the island. A human rights framework is necessary to assess the ongoing human rights violations of the quality of life to support millions of American citizens on the island.

This essay utilizes a rights-based approach to reveal historical disenfranchisement of Puerto Rico before the storms, identifies the specific human rights violations that resulted from the US government's lack of emergency preparedness and responsiveness, and demands rebuilding the island to reconcile all that has been lost. (*Am J Public Health*. 2020;110:1512–1518. doi:10.2105/AJPH.2020.305814)

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See also Rodríguez-Díaz, p. 1454.

On September 20, 2017, Puerto Rico was struck by Hurricane Maria, a category 4 storm that pummeled the island for more than 30 hours with reported wind speeds up to 155 miles per hour, precipitating one of the worst humanitarian disasters ever documented in a US territory. This megastorm made landfall just 2 weeks after Hurricane Irma, devastating the already fragile infrastructure of Puerto Rico, making Puerto Rican people even more vulnerable to numerous human rights violations. Before the storms, there were major inadequacies in physical infrastructures, and Puerto Ricans on the island had poorer health outcomes than US residents on the mainland, reflecting the effects of the persistent colonialist policies that scar the health and well-being of the people of Puerto Rico. A UN report confirmed that the human rights of Puerto Ricans on the island have been undermined for decades before these storms because of the economic and financial crises perpetuated by austerity policies. This UN report states that such policies and violations affect the rights to health, education, and social security as well as basic needs such as food, housing, and water.¹

We utilized a human rights-based approach² that calls on international covenants rooted in the Universal Declaration of Human Rights (UDHR) to

demonstrate how historical and ongoing systematic neglect of the rights of Puerto Rican people by the US government causes multiple public health challenges. A human rights-based approach pulls focus away from individuals and health care systems and places greater scrutiny on governmental systems that have exacerbated inequality and discrimination. In short, it identifies a framework to ensure government accountability for respecting, protecting, and fulfilling human rights, and to help build opportunities for people's political participation and social action. Our human rights-based approach includes an assessment of the obligations of the United States (as a duty-bearing state) and the decision-making capacity of the Puerto Rican people (the rights holders) to dismantle structural inequities, promote health and well-being, and create equitable preparedness and disaster response processes.

This essay begins with an account of the historical events that led to Puerto Rico becoming an

unincorporated US territory, the differences between statehood and territory status, and the ramifications of those differences for Puerto Rico's residents. We then describe how the systemic disadvantages of Puerto Rico's territorial status have resulted in political and economic crises that exacerbate its vulnerability to poor health and reveal gaping inequities between Puerto Rico residents and individuals in the mainland United States. Through highlighting a variety of human rights violations, especially those of nondiscrimination and right to water, electricity, and health care access, we identify a rights-based approach to address these violations and rebuild the island so that the Puerto Rican people can achieve their right to the highest attainable standard of health. The highest attainable standard of health includes the right to health care and to the necessary underlying conditions such as the right to safe drinking water, food, and housing. This right also entitles people to a

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system of health protection with equal opportunity and without discrimination, in which all related goods and services must be made available, accessible, acceptable, and of good quality.³

SLAVERY AND COLONIALISM IN PUERTO RICO

In the late 15th century, the Spaniards colonized and enslaved the indigenous Taino and Carib people of Puerto Rico and established San Juan as an essential military post. After the Spanish–American War in 1898, Puerto Rico was acquired by the United States and, soon after, established as an unincorporated territory.⁴ The Territory Clause of the US Constitution⁵ authorizes unequal treatment of US territories compared with US states as long as there is a “rational basis” for such differential treatment by government bodies including Congress.⁶ This “rational” differential treatment contributes to disparities between treatment of US territories, such as Puerto Rico, and states.⁷

The relationship between the United States and Puerto Rico highlights decades of human rights violations against the Puerto Rican people that has left the island suffering from economic, social, and political crises. The dichotomy of being both American citizens and colonial subjects has situated Puerto Ricans in a political purgatory and makes them particularly vulnerable to exploitation of their land and resources by the United States.⁸ This history is in direct violation of the 1969 International Convention on the Elimination of All Forms of Racial Discrimination

(ICERD),⁹ which asserts that colonialism and all practices of segregation and discrimination based on race and ethnicity must end. As an example, as residents of a US territory, Puerto Ricans cannot fully benefit from the protections and rights of the US Constitution and are therefore subject to unequal treatment. Despite being US citizens, residents of Puerto Rico do not have full representation in Congress, they cannot vote in national presidential elections, and in all areas of governance, US federal mandates supersede local policies and legislation,⁸ violating the right of Puerto Ricans to equal participation in political affairs.¹⁰ These unjust policies were already in place before the storms, setting a precedent of unfair, state-sanctioned discriminatory treatment of island residents during the response and recovery efforts after Hurricane Maria.

POLITICAL AND ECONOMIC CRISES IN PUERTO RICO

The constant economic crisis on the island is perpetuated by rights violations and systems of disadvantage built by the US government that include extremely high taxes to import goods into Puerto Rico and wages consistently lower than the federal minimum wage requirement.¹¹ The 2013–2017 American Community Survey estimates that 41% of all Puerto Ricans have incomes below the federal poverty level. For families with children younger than 18 years, the poverty rate is even higher, at 52.4% as compared with the national average of 16.7%.¹² The lack of affordable education and employment opportunities has forced constant

migration of Puerto Ricans to the mainland in search for higher paying jobs, dwindling the Puerto Rican labor force.¹¹ Years of economic hardship attributable in part to historical corporate tax breaks and the migration of corporations off the island led to a severe economic recession in 2006. Before the megastorms, the Puerto Rican government had \$74 billion of debt owed to investors, loans to utility agencies, and pension-related debt meant to sustain the island.¹¹

As an example of long-term and widespread injustices enacted by the US government against Puerto Rico, the Merchant Marine Act of 1920 continues to strangle Puerto Rico’s economy by requiring that maritime waters and ports be controlled by US agencies, rather than local authorities. This leads to higher-cost consumer goods compared with costs on the mainland United States, and prevents foreign countries from trading directly with Puerto Rico.⁸ In addition, it prevents foreign governments from supplying the island with goods in times of crisis.

In May of 2017, Puerto Rico declared bankruptcy in an effort to seek federal assistance in escaping debt, a financial situation that would only be made worse in the aftermath of destruction in the upcoming hurricane season. The US response to the bankruptcy declaration was to establish the Puerto Rico Oversight, Management, and Economic Stability Act (PROMESA). This act allowed Congress to appoint a fiscal control board to begin the dismantling of Puerto Rico’s debt crisis. The board has primarily consisted of politicians and financial industry executives.¹¹ Following political and economic scandals involving alleged mismanagement of relief funds and leaked messages from the

former governor, PROMESA’s representative of the Puerto Rican government resigned.

HEALTH AND HEALTH CARE APARTHEID IN PUERTO RICO

In July 2016, there were approximately 3.41 million Puerto Rican residents living on the island,¹³ many of whom were experiencing negative health outcomes and limited access to health services. Table 1 demonstrates the disparities relevant to poverty and unemployment for those living in Puerto Rico compared with Latinos living in the mainland United States and the general US population. Because in part of the high rates of poverty and unemployment, a substantial proportion of Puerto Rico’s residents utilize public programs to meet their health care needs. For instance, almost half (49%) of residents in Puerto Rico are covered by Medicaid,¹⁴ and only 35% have access to employer-sponsored insurance.¹⁴ This inequity in financing of health care costs has been associated with key health disparities, including Puerto Rico residents reporting poorer general health and being more likely to report having a disability than mainland US residents (Table 1).

A few key indicators of the substantial health disparities between Puerto Rico and the mainland United States include the fourth-highest premature birthrate of any US state or territory as of 2016,^{8,15} a high diagnosis rate of HIV at 15.1 per 100 000 as of 2015,^{8,16} a 50% greater prevalence of diabetes, and a diabetes mortality rate 3 times higher than the rest of the United States.^{13,17} Before Hurricane Maria, Puerto Rico was

TABLE 1—Socioeconomic and Health Outcome Inequities Between Residents of Puerto Rico and All US Residents, 2013–2017

	Puerto Rico Residents	US Residents
Median household income, \$	20 678 ^a	61 858 ^{a,b}
Unemployment rate, July 2016, %	10 ^a	4 ^{a,c}
Living below the federal poverty level, %	46 ^a	11 ^{a,b}
Covered by Medicaid, %	49 ^a	20 ^{a,c}
Covered by employer-sponsored insurance, %	35 ^a	60 ^{a,c}
Self-reported fair or poor health, %	34 ^d	18 ^{c,d}
Living with a disability, %	15.4 ^d	8.6 ^{c,d}

^aFrom the Kaiser Family Foundation.¹³

^bAll US residents living on the mainland and territories.

^c50 states and DC.

^dFrom the US Census Bureau.¹²

also still recovering from the 2015 Zika epidemic.⁸ The combination of state-sanctioned discrimination and capped health care spending in Puerto Rico has led to stark inequities in health and health care for island residents. When Maria made landfall, these inequities were exacerbated by inadequate support for disaster response and recovery.

MANIFESTATION OF COLONIAL NEGLECT ON INFRASTRUCTURE

The vulnerability of the power and water infrastructure before, during, and after the storm highlights the importance of rebuilding these utilities to the highest possible quality standard, rather than simply to the inadequate quality level that was present before Maria.

Access to Electricity and Potable Water

Much has been written about the effects of Hurricane Maria on the electricity infrastructure in Puerto Rico, as well as the extended period that many residents were without power and potable water following the

hurricane. However, even before the storm, these service infrastructures were not adequate for the health of the residents of Puerto Rico. In 2015, virtually all Puerto Ricans living on the island (99.5%) were being served by water supplies that were in violation of the Safe Drinking Water Act.¹⁸ In addition, almost 70% of people's water supply was in violation of health-based standards, with high levels of coliform bacteria and volatile organic compounds, and 97.2% of all Puerto Rican residents had water in violation of the Lead and Copper Rule.¹⁸

The status of the island's power supply was similarly in poor repair. A 2016 audit of the Puerto Rico Electric Power Authority referred to the system as being "in a state of crisis."^{19(p26)} This report references how the transmission and distribution systems were "cracking, corroding, and collapsing."^{19(p18)} In addition to being in poor shape, Puerto Rico's energy supplies existed almost entirely from nonrenewable sources. Before Maria, only 3.3% of Puerto Rico's power was generated from renewable energy sources, such as wind and solar, despite high potential for each of these.²⁰ In 2010,

targets related to the proportion of energy sourced from renewables have been set, but not met.²⁰

The storms left approximately half of the population (1.7 million) without drinking water²¹ and more than 1.5 million residents on the island without power.²⁰ By comparison, 280 000 were without power in Texas following Hurricane Harvey, which made landfall on August 25, 2017, as a category 4 hurricane.²² Puerto Rican households were on average without electricity for 84 days and without water for 68 days, with 83% of remote households without power for nearly 3 months.²³ In the days following the storms, the Puerto Rico Department of Health, the Puerto Rico Aqueduct and Sewer Authority, the Environmental Protection Agency, and the Centers for Disease Control and Prevention each informed residents to boil or add chlorine to their water after service had been restored.²⁴ Despite the Federal Emergency Management Agency (FEMA) declaring that 95% of Puerto Rico had potable water 60 days after the hurricane, this water had not been tested for safety by the Environmental Protection Agency,²³ placing people at risk for contracting disease. Communications regarding water supply safety were contradictory, and the timing of the repairs to the system varied across the island.²⁴

Despite the larger number of US citizens affected by Maria, disaster response in Puerto Rico was significantly slower and overall provided less relief than the disaster response to hurricanes Harvey in Texas and Irma in Florida.²⁵ For example, within 9 days after landfall, survivors of Hurricane Maria in Puerto Rico received \$6.2 million dollars of direct FEMA aid, whereas

Harvey survivors received \$141.8 million dollars.²⁵ In addition, Puerto Ricans waited 2 months longer than survivors of Harvey for less than one fourth of the total federal aid allocation for disaster relief. Given these disparities, the response to Hurricane Maria has been deemed a "resounding failure"²⁶ and is evidence of discrimination and oppression of Puerto Rican citizens.

Access to Quality Health Care

Before Hurricane Maria, there were approximately 70 formal hospitals providing health care in Puerto Rico.⁷ Because of the high rates of Medicaid coverage, many residents received their care from 1 of the 20 federally funded community health centers, which offer primary and preventive care services at 93 sites across the island.^{7,27} Fifty-three percent of community health centers primarily relied on Medicaid funding.^{13,27} Reports indicate that before the storms there was a sufficient supply of providers including 7 nurses per 1000 people and 2.5 physicians per 1000 people in Puerto Rico.^{28,29} However, access was limited as these providers were unevenly distributed throughout the island, with the highest concentration in the San Juan metropolitan area. Even before the storm, remote rural areas experienced significant shortages in health care providers,^{28,29} and 72 of the 78 municipalities were designated as medically underserved areas by the US Health Resources and Services Administration.²⁸

In the days following Hurricane Maria, only 3 of 70 previously existing hospitals were operational.¹³ One of the most significant impacts on the island

was that most hospitals were left without grid electricity and had limited access to generators with fuel.¹³ Two months after Hurricane Maria, 40% of the hospitals were still running on generators, which proved to be an unreliable power source as generators ran out of fuel resulting in intermittent outages.¹³ Community health center structures were also severely damaged during the hurricane, with 10 out of the 93 sites still closed as of October 2017.¹³ By March 2018, all health centers were reported to be opened and serving the community, but lack of grid-base electricity remained an issue for many sites.²⁷ Given the high burden of diabetes on the island, dialysis centers are a critical part of the health care system for

Puerto Rico. A majority of the island's 47 dialysis centers lost power during the hurricane and experienced issues with power failures in the following months, which sometimes required transporting patients to other centers throughout Puerto Rico and the mainland United States.^{13,30} Previous issues with the uneven distribution of health care provider access were only exacerbated by the regional displacement and continued migration of providers to the mainland United States that occurred following the storm.^{7,28} In 2017, the US Health Resources and Services Administration estimated that almost half of the current population of Puerto Rico was living in a designated Health Provider Shortage Area, meeting less than 2% of the need

for health care provider services on the island.^{13,31}

HUMAN RIGHTS VIOLATIONS BY THE US GOVERNMENT

A rights-based approach utilizes the United Nations' international covenants and treaties to shape understanding of problems and solutions necessary for people's security, dignity, and well-being. It also identifies ways in which nation states are meant to be held accountable to respect, protect, and fulfill the fundamental human rights of their people. The approach demands that states pay special attention to groups who are made more vulnerable through discrimination, colonialism, apartheid, and other forms of political, economic,

social, and cultural oppression.² Although the United States has not ratified all the international treaties relevant to the right to the highest attainable standard of health for the people of Puerto Rico, the US government is legally accountable for principles enshrined in 2 relevant covenants: the ICCPR³² (signed in 1977, ratified in 1992) and the ICERD⁹ (signed in 1966, ratified in 1992). As a result of ratification, these covenants' principles now have status equal to US federal law. While the United States signed but did not ratify the International Covenant on Economic, Social, and Cultural Rights (ICESCR) in 1977,³³ this document still helps to identify multiple rights violations and opportunities for remedy. Several UN documents, principles, and rights violations against

TABLE 2—Human Rights Violations by the US Government Against Puerto Rico

Principle	United Nations Treaty	Violations
Right to equal dignity and rights	UDHR Art. 1	US Constitution allowing for "rational basis" of differential treatment of US territories and US states
Right to freedom from discrimination based on race, language, jurisdiction, or other status	UDHR Art. 2 ICERD ⁹ Art. 2	US Constitution allowing for "rational basis" of differential treatment of US territories and US states
Right to equal protection before the law	UDHR Art. 7 ICCPR ⁹ Art. 26	US Constitution allowing for "rational basis" of differential treatment of US territories and US states
Right to equal protection before the law	UDHR Art. 21 ICCPR ⁹ Art. 25 ICERD ⁹ Art. 5 ICESCR Art. 1	Lack of full representation in US Congress and inability to vote for US president
Right to self-determination	ICCPR ⁹ Art. 1	US denial of Puerto Rican citizens the right to vote on statehood status and realize full economic, cultural, and social development
Right to adequate standard of living and improvement of living conditions	ICESCR Art. 11	Inadequate support before the storm and inadequate recovery efforts after the storm
Right to highest attainable standard of physical and mental health	ICESCR Art. 12	Inadequate support before the storm and inadequate recovery efforts after the storm
Right to seek remedies for discriminatory justice	ICERD ⁹ Art. 6	Discriminatory practices in the allocation of federal disaster aid
Right to benefit from scientific progress	UDHR Art. 27 ICESCR Art. 15	Lack of resources to rebuild infrastructure to the highest standard using modern technology available

Note. ICCPR = International Covenant on Civil and Political Rights; ICERD = International Convention on the Elimination of All Forms of Racial Discrimination; ICESCR = International Covenant on Economic, Social, and Cultural Rights; UDHR = Universal Declaration of Human Rights.

^aIndicates that the United States has signed and ratified the covenant and is therefore legally accountable to respect, protect, and fulfill obligations of the covenant.

the people of Puerto Rico are outlined in Table 2 and described in the next section.

Unequal Treatment

Article 1 of the UDHR stresses the equality of all human beings in regard to one's right to dignity and equal rights.³⁴ The US Constitution, which allows for a "rational basis" of differential treatment of territories and US states, violates this by granting rights differently depending on where an individual may live. This unequal treatment is discriminatory along racial and ethnic lines, which violates Article 2 of the UDHR³⁴ and the ICERD,⁹ which enshrines the right to freedom from discrimination based on race, language, and jurisdiction. The US government response to the hurricanes was far more comprehensive and immediate for communities in the continental United States than it was for the people of Puerto Rico.²⁵ This unequal treatment is perpetuated by a politics of disinvestment and neglect from US government regarding Puerto Rico as a colony and the heightened anti-Latinx sentiment demonstrated by the current administration.

Self-Determination and Economic Justice

The US oppression of Puerto Rico demonstrates a sociopolitical violation of Article 1 of the ICCPR, which states: "All peoples have the right of self-determination. By virtue of that right, people are meant to freely determine their political status and freely pursue their economic, social, and cultural development."³² As US citizens, Puerto Ricans are entitled to the same protections as mainland citizens, and any difference in the treatment of Puerto Ricans is in clear

violation of both treaties. Article 5 of the ICERD supports that Puerto Ricans should not be denied rights because of their Puerto Rican identity or region, and clearly demonstrates that the United States is responsible for protecting and promoting the political (Article 5c) and civil rights (Article 5d) of the Puerto Rican people.⁹

Although signature without ratification does not hold the United States accountable to the ICESCR, signature does demonstrate that the United States endorses those basic principles and reaffirms the international norm that all rights are indivisible and interdependent. Therefore, the right to the highest attainable standard of health of ICESCR's Article 12³³ and of General Comment 14³⁵ help to demonstrate principles for government action and accountability in areas that have direct relevance to Article 1 of the ICCPR,³² which asserts that people should be able to freely pursue their economic, social, and cultural development. It is impossible to achieve good health and well-being without economic stability and the ability to meet basic needs. Poverty causes poor health outcomes by both reducing access to health care services and simultaneously increasing vulnerability attributable to lack of access to safe water and utilities necessary to meet basic needs.³⁶

Basic Needs of Water and Electricity

Water is essential for life and is important for all dimensions of good health. General Comment 15 of the ICESCR demonstrates that the right to clean, potable water is related to many other human rights obligations,³⁷ specifically that people are entitled to a "minimum amount of safe drinking water" and to

participating in water-related decision-making.³⁷ That drinking water was at such poor quality before the hurricane demonstrates the US failure to respect, protect, and fulfill this human right. In addition, the lack of effective response after the hurricanes on the part of the US government to secure basic needs, including potable water and electricity, violates the right to the highest attainable standard of health. It is likely that a portion of the 4645 estimated excess deaths that occurred in the 3 and half months following the storms³⁸ are directly or indirectly attributable to the lack of basic utilities of electricity and water. Indeed, one third of these deaths were found to be the result of delayed or interrupted health care,³⁸ which may be in part attributable to health care institutions not having power with which to operate. The failure of the United States to fulfill the right to health by providing a swift and sufficient response to the storms is a violation of multiple international human rights standards and to US federal law. The US government must progressively act toward meeting its rights obligations.

RIGHTS-BASED APPROACH TO HEALTH EQUITY

The political and economic oppression of Puerto Rico is a highly complex and controversial topic, and the notion of colonial status versus independence can often derail our attention from the larger issues of human rights abuses that have deeply affected the health and well-being of the people of Puerto Rico. Regardless of Puerto Rico's status, the United States has a responsibility because of internationally agreed-upon covenants

and their own federal laws to not directly violate the human rights of their citizens. A human rights framework can guide the rebuilding and restructuring of Puerto Rico. Following the UN guidelines for recovery and reparations for chronic and acute harms suffered,³⁹ immediate restitution from the US government is owed to the citizens of Puerto Rico. To achieve this ambitious goal, we recommend a multipronged human rights-based approach to promote truth and acknowledgment of past injustices and advocate a process of peace building, unification, and reconciliation.

Recommendations for Equitable Response

The central pillar of actualizing a human rights-based approach is to hold governments accountable for their violations of human rights and ensure opportunities for meaningful public participation in the process. The process should be informed by and require participation of Puerto Rican representatives such that they contribute to the decision-making and implementation. Puerto Rico's physical infrastructure must be improved to adequately meet all people's basic and health care needs while also being capable of withstanding and quickly recovering from megastorms. Investment in adequate and sustainable infrastructure that benefits from scientific advancement, such as solar and wind power options, as well as advanced agricultural renewal strategies, will contribute to economic development. The Puerto Rican and US federal governments should review and enhance the disaster response plan activities, such as

communication and preparedness procedures to ensure fulfillment of the right to information as it is essential to achieving the highest attainable standard of health.

Recommendations for Reducing Vulnerabilities

More than a century of political disenfranchisement, economic depression, and deliberate disinvestment in the infrastructure and stability of the island are crimes against the Puerto Rican people. Meaningful compensation for lost opportunities related to Hurricane Maria must be addressed. This includes loss of employment, education, and social benefits that may have been arrested or restricted during the crisis. With tremendous debt lingering above Puerto Rico, extreme poverty will remain, and restorative justice will not be feasible. To address this, a debt relief or stimulus plan could be developed and implemented to bolster the economy and give Puerto Rican civic, government, and business leaders the financial resources necessary to improve the quality of life for Puerto Rico's residents. Finally, a permanent repeal of unjust austerity policies and banishment of any fiscal control boards will allow for local government and civic leaders to determine and promote economic development on their own.

CONCLUSION

Hurricane Maria represents one of the most damaging and costly storm-related disasters ever documented in the United States.⁴⁰ The historical colonial relationship between the mainland United States and Puerto Rico led to inadequate electric, power, and health care infrastructures before the storms.

These inadequacies were only exacerbated in the aftermath of the storm, continuing to violate numerous human rights and inhibit Puerto Rico's ability to provide for its residents and promote the highest attainable standard of health.

To prepare for changing weather and storm patterns that continue to increase in both frequency and severity because of the climate crisis, Puerto Rico needs to develop a political and civil infrastructure that can be sustained throughout such natural disasters. However, this cannot be achieved until the structural and systemic neglect brought on by the US government and appointed officials comes to light and the damage is repaired and restored so that Puerto Ricans can meet their basic needs so necessary for their health and well-being for generations to come. **AJPH**

CONTRIBUTORS

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

No human participants were involved. Therefore, institutional review board approval was not needed.

REFERENCES

- UN General Assembly. Draft resolution introduced in Decolonization Committee Calling on United States to Expedite Self-Determination Process for Puerto Rico. 2001. Available at: <https://www.un.org/press/en/2001/gacol3052.doc.htm>. Accessed October 28, 2018.
- Gruskin S, Daniels N. Process is the point: justice and human rights: priority setting and fair deliberative process. *Am J Public Health*. 2008;98(9):1573–1577.

- UN Office of the High Commissioner for Human Rights. The Right to Health. Fact Sheet No. 31. 2008. Available at: <https://www.ohchr.org/Documents/Publications/Factsheet31.pdf>. Accessed April 20, 2020.
- Carrion AM, Babin Cortés MT. *Puerto Rico, a Political and Cultural History*. New York, NY: W. W. Norton & Company; 1983.
- US Const, Art IV, § 3, Cl 2.
- US Congress. Congressional Task Force on Economic Growth in Puerto Rico. 2016. Available at: [https://www.finance.senate.gov/imo/media/doc/Bipartisan Congressional Task Force on Economic Growth in Puerto Rico Releases Final Report.pdf](https://www.finance.senate.gov/imo/media/doc/Bipartisan%20Congressional%20Task%20Force%20on%20Economic%20Growth%20in%20Puerto%20Rico%20Releases%20Final%20Report.pdf). Accessed October 30, 2018.
- Artiga S, Hall C, Lyons B. Health care in Puerto Rico and the US Virgin Islands: a six-month check-up after the storms. Kaiser Family Foundation. 2018. Available at: <https://www.kff.org/medicaid/issue-brief/health-care-in-puerto-rico-and-the-u-s-virgin-islands-a-six-month-check-up-after-the-storms-report>. Accessed October 30, 2018.
- Rodríguez-Díaz CE. Maria in Puerto Rico: natural disaster in a colonial archipelago. *Am J Public Health*. 2018;108(1):30–32.
- UN General Assembly. International Convention on the Elimination of All Forms of Racial Discrimination. 1965. Available at: <https://www.ohchr.org/EN/ProfessionalInterest/Pages/CERD.aspx>. Accessed October 20, 2018.
- UN Human Rights Council. Equal participation in political and public affairs. 2018. Available at: <https://www.ohchr.org/EN/Issues/Pages/EqualParticipation.aspx>. Accessed November 3, 2018.
- Nazario CR. *Poverty in Puerto Rico: A Socioeconomic and Demographic Analysis With Data From the Puerto Rico Community Survey (2014)*. Humacao, Puerto Rico: Inter American University of Puerto Rico, Metro Campus; 2016.
- US Census Bureau. Selected economic characteristics 2013–2017 American Community Survey 5-year estimates. 2017. Available at: [https://data.census.gov/cedsci/table?d=ACS 5-Year Estimates Data Profiles&tid=DP03&tid=ACSDP5Y2017.DP03&lastDisplayedRow=25](https://data.census.gov/cedsci/table?d=ACS%205-Year%20Estimates%20Data%20Profiles&tid=DP03&tid=ACSDP5Y2017.DP03&lastDisplayedRow=25). Accessed October 28, 2018.
- Michaud J, Kates J. Public health in Puerto Rico after Hurricane Maria. Kaiser Family Foundation. 2017. Available at: <https://www.kff.org/other/issue-brief/public-health-in-puerto-rico-after-hurricane-maria>. Accessed October 30, 2018.
- Kaiser Family Foundation. Puerto Rico: fast facts. 2017. Available at: <https://www.kff.org/disparities-policy/factsheet/puerto-rico-fast-facts>. Accessed October 30, 2018.
- March of Dimes Foundation. 2016 Premature birth report card, United

- States. 2016. Available at: <https://www.marchofdimes.org/materials/premature-birth-report-card-united-states.pdf>. Accessed November 3, 2018.
- Hess K, Dailey A, Johnson A, et al. Diagnoses of HIV infection in the US & dependent areas, 2015. HIV Surveillance Report. Centers for Disease Control and Prevention. 2015. Available at: <https://www.cdc.gov/hiv/pdf/library/reports/surveillance/cdc-hiv-surveillance-report-2015-vol-27.pdf>. Accessed November 3, 2018.
- National Center for Health Statistics. *Health, United States, 2016: With Chartbook on Long-Term Trends in Health*. 2017. Available at: <https://www.cdc.gov/nchs/data/health-us/16.pdf#015>. Accessed November 3, 2018.
- Asociación Nacional de Derecho Ambiental El Puente: Enlace Latino de Acción Climática America Verde. Threats on tap: drinking water violations in Puerto Rico. 2017. Available at: <https://www.nrdc.org/sites/default/files/threats-on-tap-drinking-water-puerto-rico-ip.pdf>. Accessed November 3, 2018.
- Fisher JI, Horowitz AI. Review of rates of the Puerto Rico Electric Power Authority. Puerto Rico Energy Commission. 2016. Available at: <https://energia.pr.gov/wp-content/uploads/2016/11/Expert-Report-Revenue-Requirements-Fisher-and-Horowitz-Revised-20161123.pdf>. Accessed November 11, 2018.
- Sweeney S. Puerto Rico's energy future: keeping power with the people. *New Labor Forum*. 2018;27(2):87–92.
- Jakabovics A. Beginning to assess the magnitude of destroyed housing after Maria. Enterprise Community Partners Inc. 2017. Available at: <https://www.enterprisecommunity.org/blog/2017/09/beginning-assess-magnitude-destroyed-housing-after-maria>. Accessed November 13, 2018.
- DiChristopher T. Texas utilities struggle to restore power as Harvey hampers progress. CNBC. August 28, 2017. Available at: <https://www.cnn.com/2017/08/28/texas-utilities-struggle-to-restore-power-as-harvey-hampers-progress.html>. Accessed November 2, 2018.
- Panditharatne M. FEMA says most of Puerto Rico has potable water. That can't be true. *Washington Post*. December 21, 2017. Available at: https://www.washingtonpost.com/outlook/fema-says-most-of-puerto-rico-has-potable-water-that-cant-be-true/2017/12/21/cf8d8ce0-e511-11e7-a65d-1ac0fd7f097e_story.html?utm_term=.0060b4ac8fb4. Accessed November 6, 2018.
- Exum NG, Betanzo E, Schwab KJ, Chen TYJ, Guikema S, Harvey DPE. Extreme precipitation, public health

- emergencies, and safe drinking water in the USA [erratum in *Curr Environ Health Rep.* 2018;5(2):316]. *Curr Environ Health Rep.* 2018;5(2):305–315.
25. Willison CE, Singer PM, Creary MS, Greer SL. Quantifying inequities in US federal response to hurricane disaster in Texas and Florida compared with Puerto Rico. *BMJ Glob Health.* 2019;4(1):e001191.
26. Farber D. Response and recovery after Hurricane Maria: lessons for disaster law and policy. *Disaster Law Policy;* 2018;87(3):743–771.
27. Kaiser Family Foundation. Health centers in Puerto Rico: operational status after Hurricane Maria. 2018. Available at: <https://www.kff.org/medicaid/fact-sheet/health-centers-in-puerto-rico-operational-status-after-hurricane-maria>. Accessed October 30, 2018.
28. Perreira K, Peters R, Lallemand N, Zuckerman S. Puerto Rico health care infrastructure assessment. Urban Institute. 2017. Available at: https://www.urban.org/sites/default/files/publication/87011/2001050-puerto-rico-health-care-infrastructure-assessment-site-visit-report_1.pdf. Accessed October 30, 2018.
29. Levis-Peralta M, Llompar A, Sanchez MC, Sosa-Pascual A, Matousek SB, Day R. Description of the state health care environment: Puerto Rico State Health Innovation Plan. Rio Piedras, Puerto Rico: Department of Health; 2016.
30. US Department of Health and Human Services. Hurricane season: oversight of the federal response, statement of Robert Kadlec, MD, assistant secretary for preparedness and response. 2017. Available at: <http://www.hsgac.senate.gov/download/10/30/2017/testimony-kadlec-2017-10-31>. Accessed November 15, 2018.
31. Health Resources and Services Administration. Designated Health Professional Shortage Areas statistics. 2016. Available at: https://ersr.hrsa.gov/ReportServer/Pages/ReportViewer.aspx?/HGDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Smry&rs:Format=PDF.%0A38. Accessed November 15, 2018.
32. UN General Assembly. International Covenant on Civil and Political Rights. 1966. Available at: <https://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx>. Accessed October 28, 2018.
33. UN General Assembly. International Covenant on Economic, Social and Cultural Rights. 1966. Available at: <https://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx>. Accessed October 20, 2018.
34. UN General Assembly. Universal Declaration of Human Rights. 1948. Available at: <http://www.un.org/en/universal-declaration-human-rights>. Accessed October 20, 2018.
35. UN Committee on Economic Social and Cultural Rights. General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12). 2000. Available at: [https://www.ohchr.org/EN/Issues/Education/Training/Compilation/Pages/e/GeneralCommentNo14TheRighttotheHighestAttainableStandardofHealth\(article12\)\(2000\).aspx](https://www.ohchr.org/EN/Issues/Education/Training/Compilation/Pages/e/GeneralCommentNo14TheRighttotheHighestAttainableStandardofHealth(article12)(2000).aspx). Accessed April 20, 2020.
36. Hunt P, MacNaughton G. Impact assessments, poverty and human rights: a case study using the right to the highest attainable standard of health. World Health Organization. 2006. Available at: https://www.who.int/hhr/Series_6_ImpactAssessments_Hunt_MacNaughton1.pdf. Accessed October 12, 2019.
37. UN Committee on Economic Social and Economic Rights. General Comment No. 15: The Right to Water (arts. 11 and 12 of the International Covenant on Economic, Social and Cultural Rights). 2002. Available at: https://www2.ohchr.org/english/issues/water/docs/CESCR_GC_15.pdf. Accessed April 20, 2020.
38. Kishore N, Marqués D, Mahmud A, et al. Mortality in Puerto Rico after Hurricane Maria. *N Engl J Med.* 2018;379(2):162–170.
39. UN General Assembly. Basic Principles and Guidelines on the Right to a Remedy and Reparation for Victims of Gross Violations of International Human Rights Law and Serious Violations of International Humanitarian Law. 2005. Available at: <https://www.ohchr.org/en/professionalinterest/pages/remedyandreparation.aspx>. Accessed April 20, 2020.
40. National Oceanic and Atmospheric Administration. Fast facts: hurricane costs. Office for Coastal Management. 2019. Available at: <https://coast.noaa.gov/states/fast-facts/hurricane-costs.html>. Accessed January 7, 2019.

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