

The influence of the U.S. response to COVID-19 in Global Health

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Abstract *The American response to the pandemic involves a prominent volume of federal resources, especially for developing and acquiring products for internal use, such as diagnostics or vaccines. Investment mechanisms and historical aspects justify this expenditure. Thus, the social construction of nationalism in American society hinders access to health technologies. The review of such aspects shows how the United States (U.S.) secured a large number of potential products, ensuring excessive local production. This unilateral foreign policy has influenced other countries or regional blocs and undermined global cooperation and solidarity, affecting the collective health of several nations.*

Key words *COVID-19, Health Sciences, Technology, and Innovation Management, Government Agencies, Access to Technological Innovation*

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Introduction

Amidst more than a million deaths, and still without a product as an effective response to the pandemic, the world is divided between international and domestic efforts. Treatments will not be available immediately, and competition to have them can impair access. The balance between speed and effectiveness in development is also an economic challenge. The efficiency of securing financial investments includes humanitarian components¹ confronted by political interests². Although collective attention to vaccines is more prominent, other products such as diagnostics and therapies are essential, besides non-pharmacological interventions.

Access would not be guaranteed even if health technologies to combat COVID-19 were considered global public goods, as such knowledge would need to be produced and distributed. Accordingly, besides the Access to COVID-19 Tools Accelerator (ACT-Accelerator) and the COVID-19 Technology Access Pool (C-TAP), based on the actions of the Global Alliance for Vaccines and Immunization (GAVI), the World Health Organization (WHO) launched Covax, a strategy for the production of vaccines with efficient global distribution. Nevertheless, while investing for global solidarity and cooperative response, countries like Germany, France, Holland, and Italy made their purchase commitments, and the United Kingdom has also invested independently³.

The United States (U.S.) does not participate in Covax; even so, its nationalist measures to respond to COVID has more significant financial resources than global cooperative mechanisms, finding support in the global trading system, referenced in the American currency, which reveals that the preponderance of national interests in American foreign policy is not new. However, the U.S. role in global leadership is shifting. New financing mechanisms carry out development and advance purchases. While the amounts committed by the U.S. are very high compared to other countries, the amount does not show a relevant discrepancy as a share of the American GDP. It is proportional to a high public health expenditure history in the U.S., fostering a large innovation ecosystem despite inequalities.

The analysis of the U.S. response to the pandemic aims to warn of the risks to Global Health with the compromised potential of global supply and access to technologies, which can impact Brazil. The brief historical course described

shows the coherence of current postures vis-à-vis the contemporary construction of American nationalism. The U.S. investments in programs coping with COVID-19 evidence high financial resources in: research, development, infrastructure, and technological supplies – supported by institutional and cultural mechanisms that stand out in the dispute for developing vaccines. These aspects influence other countries or regions and reduce the potential for solidarity implemented by multilateral organizations, thus impairing other countries' access to developed technologies, necessary for an effective response given the current global interconnectedness.

Methods

The paper presents a review of American nationalism and U.S. strategies for coping with recent pandemics and how they influenced the current response to COVID-19. The narrative does not use explicit and systematic criteria for analyzing the literature. Secondary sources were searched on the websites of the institutions cited throughout the text, which show the values of American investments in previous pandemics and the amount over the time of recent investments, classified by technology, research and development, or production stages. The paper also tracks the record of events related to the pandemic, domestically within the U.S. and external repercussions. Two categories became more relevant from this information: investment mechanisms and nationalism, with American exceptionalism as a particular case.

Exceptionalism is presented within a constructivist historical context, with political and economic elements. This concept is frequently used in international relations and combines the categories that guide institutions from the case study response to the pandemic. Thus, the allocation of resources in the American institutional repertoire reverberates on Global Health. The importance for Public Health is defined by the interface of biomedical production as a determinant of health inequalities that can affect Brazil.

Results

Resources for the pandemic have been a source of competition among countries. Limits of immediate supply of products led to shortages and price increases⁴ with growing demand for pan-

demic-related products, which occurred for personal protective equipment, pharmaceutical supplies, equipment and continues in new therapies or the case of promising vaccines. As a result of this competitive aspect, the pandemic can change the process of financing research and development of medical products and their respective acquisition.

Investment and pricing mechanisms in the pandemic

In the case of the U.S., the main mechanisms observed during the pandemic were value-based pricing, cost-sharing, and advanced market commitments. The pharmaceutical sector typically acts on (incremental and radical) innovation with high research and development and marketing costs. However, new products are generally priced based on production costs and external references to other products or associated benefits. A discussion about several new mechanisms for pricing in medicines was ongoing even before the pandemic, including value-based pricing⁵. In this case, the costs avoided by the administration of a particular medication or therapy are considered. This criterion has been applied in other epidemics and recently for innovative drugs for hepatitis, cancer, or rare diseases.

Cost-sharing is determined by U.S. Federal Law when there is a possibility of gain by the contracted. The level of sharing is negotiated and depends on gains, property rights, or national interest⁶. In the case of American investments for the development of COVID-19 products, this precedes the actual use and is related to surpassing goals. Thus, some agreements involve lower prices with this investment, while others are limited to purchase. Advanced Market Commitments (AMC) were proposed as an incentive, through a purchase commitment of a certain amount⁷, to create a market for the development of new products. Initially applied to the development of a pneumococcal vaccine by the Global Alliance for Vaccines and Immunization (GAVI), this mechanism expanded the availability and access to the vaccine by developing countries, facilitated by the global support of several countries and the World Bank.

The U.S. also has different mechanisms for procurement contracts, called Other Transaction Agreements (OTA)⁸. American legislation for financial assistance mechanisms in cooperation agreements secures intellectual property rights for government investments. In this sense, the

Bayh-Dole Act defines specific rights to use intellectual property: without authorization, with due financial compensation, or, in the case of provision of public interest, in reasonable terms. In turn, OTAs are exempt from this aspect, freely traded, and consequently carry risks. Another commitment mechanism is indefinite contracts, which allow an immediate start of the installment without defined terms. As of July 2020, for COVID-19, the U.S. government had US\$ 2.2 billion in indefinite contracts and US\$ 6.5 billion from the Department of Defense in OTAs for prototypes and production⁹.

Contemporary construction of American nationalism

While countries are competing for resources to address the pandemic, there are also political components to be considered. In this respect, current nationalism takes on importance similar to events during the Cold War, such as space or arms race. In the American case, nationalism was already trending in the government's proposals before the pandemic, although conflicts between globalization and nationalism refer to several previous periods. The recent shift is in what extent the United States is abandoning its global leadership role in assertive multilateralism.

Historically, nationalist movements have occurred in the U.S. since its founding, such as the Tea Party in revolt against British taxes. Therefore, its emergence as a nation is marked by liberal and individualistic values present in the constitution. Historical studies attribute the victory in the Civil War to a civic nationalism with cultural and economic elements¹⁰. More recently, some international movements, policies, and agreements have characterized nationalist aspects in the last century's American government.

The slogan *America First* stems from an anti-interventionist movement that began in 1917, between the First and the Second World War. Democrat President Woodrow Wilson cited this motto to characterize America's neutrality in World War I. It was also one of the slogan choices in Republican Sen. Wilson Harding's presidential campaign, in the subsequent election he won, besides *Back to Normalcy*. This later gained more attention when, in 1940, the *American First Committee* advocated isolationism against the American entry into WWII, losing relevance shortly after the attack on Pearl Harbor¹¹. We can observe that the concept was widely used by different ideological lines, both socialist and conservative.

The national preference in government purchases corresponded to another instrument of American nationalist policy. The first such act in the U.S. was the *Buy American* in 1933, which determined a preference margin of 25% for products produced in the U.S., with the possibility of exception due to the unavailability of the product, quantity offered, or in countries such as Canada and Israel, by General Agreement on Tariffs and Trade (GATT). Another act of preference for national purchases, the 1982 *Buy America Act*, is part of the *Surface Transportation Assistance Act*, defining that government bulk transportation purchases should prefer domestic products or products partially financed by federal funds¹².

In 1944, with the creation of institutions such as the International Monetary Fund and the World Bank, the Bretton Woods agreement was important in international cooperation and relevant to American leadership. It provided victory for American nationalist interests over globalized multilateral governance. This privilege is perpetuated to this day, even after the U.S. abandoned the dollar-gold conversion in 1971 due to international pressures, besides inflation and deficits¹³.

Consequently, the governments of the second half of the last century were marked by the global leadership of *Pax Americana*. This new American exceptionalism was linked to military and political hegemony, as an exception to European regulations, taken up mainly by Reagan with promises of an American mission to lead the world in a differentiated position from other nations. In particular, this religious-civic posture is marked by a low tendency towards international cooperation without perceiving gains in this regard¹⁴.

In health, although Salk determined his discovery of the polio vaccine would be patent-free, commercial production created abusive prices for the vaccine in the U.S., and problems with the production of a licensed laboratory resulted in 120,000 doses of an active virus with thousands of sequelae and some deaths¹⁵. Thereafter, vaccination was promoted free of charge by the government, despite great fear, and the U.S. have not had polio cases since 1979, long before other countries¹⁶. In another episode, alerted to a possible swine flu epidemic in 1976, Gerald Ford accelerated the production process by vaccinating 40 million people, with some adverse effects of Guillain-Barré syndrome¹⁷.

In 2003, President Bush's Emergency Presidential AIDS Relief Plan (PEPFAR) consolidated the American global leadership in the pharmaceutical market after securing domestic supply¹⁸.

In 2005, in response to the possible H5N1 avian flu epidemic, Bush requested US\$ 7.5 billion for a response, of which 1 billion was for the purchase of Oseltamivir and 1.2 billion for vaccines¹⁹.

In the Obama administration, US\$ 7.65 billion was approved for the fight against swine flu in 2009, with 1 billion for the purchase of vaccines²⁰. Following an initial promise of 100 million doses of vaccines, a manufacturing problem reduced the forecast to 40 million. However, only 11 million doses were available²¹ in October of the same year. In the following year, after ensuring national coverage, the U.S. and other high-income countries donated 10% of the vaccine stock to other countries.

Despite the recent nationalist ideology, Obama was the first president to take a public stand on American exceptionalism and was criticized for his multilateral stances²². For his part, Trump mentioned the *America First* slogan on several occasions and in his inaugural address.

Although the Republican Party favored globalization for a long time, this has been reversed with Trump, with the simultaneous shift in the Democratic Party support for the Trans-Pacific Partnership (TPP) agreement²³. Throughout the current government, the U.S. withdrew from international agreements such as the TPP and announced its withdrawal from the WHO²⁴. Recently, in August 2020, Trump signed a presidential order demanding that essential drugs and health products purchased by the government be manufactured in the U.S. and the FDA would be responsible for establishing that list of products.

Turning our attention to the 2020 American Elections, nationalist interests remain constant, when Democratic candidate Joe Biden also presents this aspect in his *Made in All of America* plan with proposals *Buy American*, *Make it in America*; *Innovate in America*; and *Supply America*²⁵. However, the candidate is more favorable to American leadership in global cooperation.

U.S. Federal Response to the Pandemic

The leading federal health agency in the U.S. is the Department of Health and Human Services (HHS), equivalent to the Ministry of Health in many countries. Initially created in 1939 as a Public Health Service, HHS still maintains this component in its structure, part of which contains the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), and the Food and Drug Administration (FDA). Currently, with particular relevance in the pan-

demic, the Biomedical Advanced Research and Development Authority (BARDA) division, created in 2006, reports to the Office of the Assistant Secretary for Preparedness and Response.

The U.S. response failed early on in the pandemic. In a first nationalist episode, the U.S. opted for its test instead of the one used globally. The CDC test failed with one of the probes, as reported by several official U.S. laboratories²⁶. The HHS rescinded the need for FDA approval for testing²⁷ only on August 19.

Another episode that delayed testing in the U.S. has to do with the State of Emergency declaration by the American Secretary of Health on January 31, 2020²⁸. Institutional laboratories are generally allowed to use their tests in their domains. However, after the implementation of the 2013 Pandemic and All-Hazards Preparedness Reauthorization Act, the U.S. Congress changed section 564 of the Federal Food, Drug, and Cosmetic (FDCA) Act to delegate Special Use Authorization to the FDA in case of emerging infectious diseases, aiming at greater safety in the tests²⁹.

The first significant act in the ongoing budget was the Coronavirus Preparedness and Response Supplemental Appropriations Act on March 6, which released US\$ 8.3 billion to respond to COVID-19. From this total, the bill provided more than US\$ 3 billion for research and development of diagnostic tests, therapies, and vaccines, although only US\$ 300 million was allocated to purchase them. In particular, the law set an amount of US\$ 1.25 billion for international assistance, in diplomatic programs, global public health, disaster assistance, or economic support³⁰. At the end of March, the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) provided more significant economic support of US\$ 2.2 trillion to individuals, companies, local governments, education, and health, with US\$ 135 billion destined for health care³¹.

The leading American agency for financing biomedical or public health research, NIH is responsible for about 28% of a total of US\$100 billion of annual investments in biomedical research in the U.S. Both NIH and CDC budgets have increased in real values since their creation in 1962. It is noteworthy that the amount for research financed by the NIH hiked from US\$ 15 billion in 1990 to almost US\$ 40 billion in 2010, remaining relatively stable at around US\$ 30 to 35 billion in recent years, with a real inflation-adjusted decrease³². However, over the years, as part of the Health and Human Services (HHS) department's budget, it has tended to decline, es-

pecially after the creation of Medicare and Medicaid in 1965.

In total, at the federal level, about US\$ 3.5 trillion is spent on health per year. This is equivalent to approximately 5% of the U.S. GDP. As shown in Figure 1, the HHS had a budget of US\$ 1.2 trillion in 2019, and since 2010, more than 85% of the resources have been spent on the federal assistance component (more than US\$ 1 trillion in 2019, only with Medicare and Medicaid programs).

As a consequence of the Anthrax attacks, after the events of September 11, 2001, the U.S. created a biomedical defense organism called BARDA from the Pandemic Preparation Act³³. Its structure builds on the Bioshield Project³⁴, which planned the purchase of US\$ 5 billion in vaccines against bioterrorist attacks in 2004. BARDA's mission is "to develop and acquire necessary medical countermeasures, including vaccines, therapeutics, diagnostics, and non-pharmaceutical countermeasures, against a wide range of natural or intentional threats to public health".

Since then, BARDA's annual budget has remained at around US\$ 1 billion, financing medical technologies to prevent terrorist attacks or public health emergencies and for strategic stocks. In this sense, besides Anthrax, BARDA invested in products against botulism, influenza, measles, Ebola, Zika, mustard gases, chlorine, and nuclear events. Concerning COVID-19, the agency diversified the measures looking for partnerships for products and manufacturing capacity, as shown in Figure 2 and Table 1, respectively. In products, the biggest highlight is vaccines, corresponding to US\$ 10.7 billion of the total of almost US\$ 12 billion. As new investment plans for vaccines have not been observed since early August, investments continue in diagnosis, rapid response capabilities (such as sepsis diagnostics and remote sensors), and manufacturing.

Although the American response showed initial flaws in the production of diagnostic tests, especially in the coordination of non-pharmacological measures, the current response has a large volume of resources for financing products. With the participation of several institutions, Operation Warp Speed is a program of public-private partnerships that aims to accelerate the development, manufacture, and distribution of COVID-19 diagnostics, therapies, or vaccines. Despite the comprehensive strategy, its main focus is to produce and deliver 300 million doses of vaccines, and in that sense, the seven most promising vaccine candidates were selected in May.

When announced in April 2020, Operation Warp Speed would have more than US\$ 10 billion available, initially 6.5 billion for BARDA and 3 billion for NIH. Since then, several resources have been provided as AMCs, many of them depending on the results of successful clinical tests³⁵. Moncef Slaoui and General Gustavo Perna were invited to lead the operation. The latter has logistical experience in the Materials Command of the American Army and is director of operations.

Several institutions participate in Operation Warp Speed: some components of HHS, such as NIH, BARDA, CDC, FDA, the Department of Defense, Agriculture, Energy, and Veteran Affairs. Measures against previous epidemics like Zika³⁶ inspired this articulation. An organization chart of the operation indicates the strong presence of military personnel in command, especially in the area of operations, although it signals some public health professionals such as the head of the CDC and BARDA and NIH representatives³⁷. As shown in Table 2, the contributions reported on the HHS website regarding the Warp Speed operation reflect BARDA's investments, including some manufacturing investments and a contribution for antibodies. Vaccine doses correspond only to already committed payments, with additional expected demands.

With the Operation Warp Speed resources, the NIH-Wide Strategic Plan for COVID-19 Research defined five priorities: fundamental knowledge, detection, treatment, prevention, and disparities in vulnerable populations. Two main programs implemented this: The Accelerating COVID-19 Therapeutic Interventions and Vaccines (ACTIV) to accelerate treatments and vaccines, and the Rapid Acceleration of Diagnostics (RAD-X) for diagnostics. Most resources were allocated to the National Institute of Allergy and Infectious Diseases (NIAID), one of the institutes underlying the NIH. Thus, as shown in Figure 3, the regularly scheduled financing, Operation Warp Speed significantly expanded investments for COVID-19 research. As of September 19, 2020, approximately US\$ 1.7 billion was invested with extraordinary resources and approximately US\$ 300 million with regular resources³⁸.

Discussion

Although the U.S. led the Universal Declaration of Human Rights movement, they withdrew from the U.N. Council and opposed the declaration in the 1950s, ratifying some topics after the 1960s. American society identifies with individual freedom and democracy, as noted in

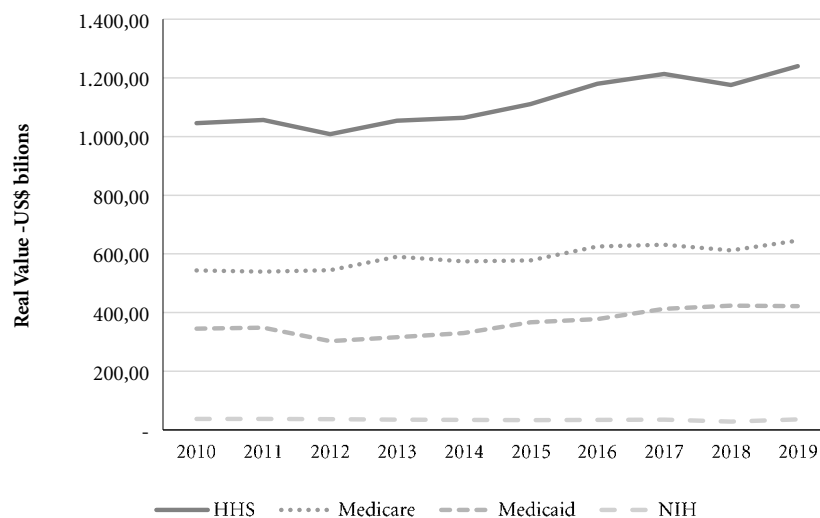


Figure 1. History of HHS Budget Components.

Source: Budget in Brief at hhs.gov (own elaboration).

its justifications for international interventions. Noteworthy is that American exceptionalism legitimizes the hegemonic position, as does the *America First*. Thus, the resumption of nationalist values in the American identity facilitates isolationist attitudes.

Hence, the U.S. did not sign the global agreement for Covax vaccines and thus moved away from the world leadership role they have assumed in recent decades. In a broad aspect, governments feel pressure to respond to their citizens. However, the American response is based on political

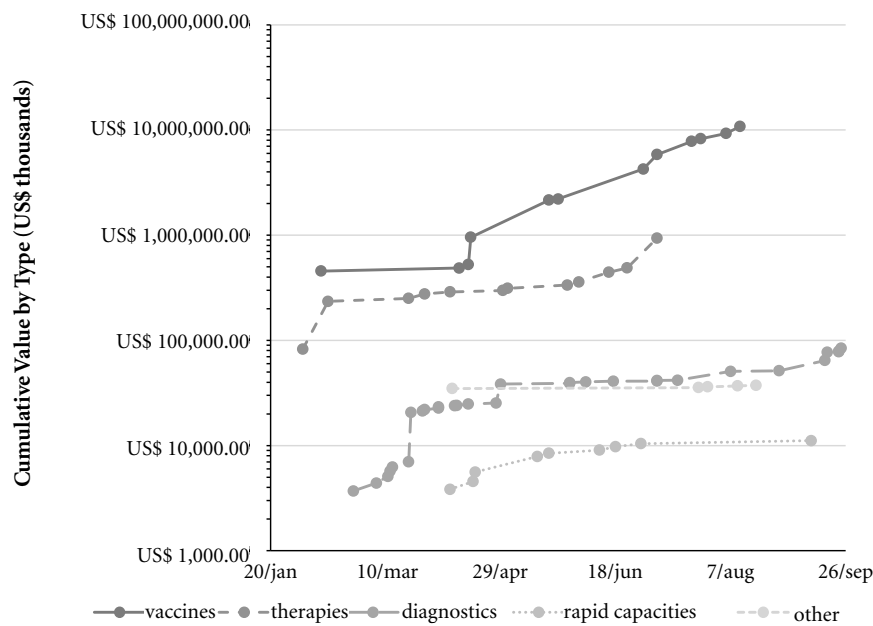


Figure 2. BARDA Portfolio Values by Product Type for COVID-19.

Source: MedicalCountermeasures.gov (own elaboration), access on 26/9/2020.

Table 1. BARDA Manufacturing Investments for COVID-19.

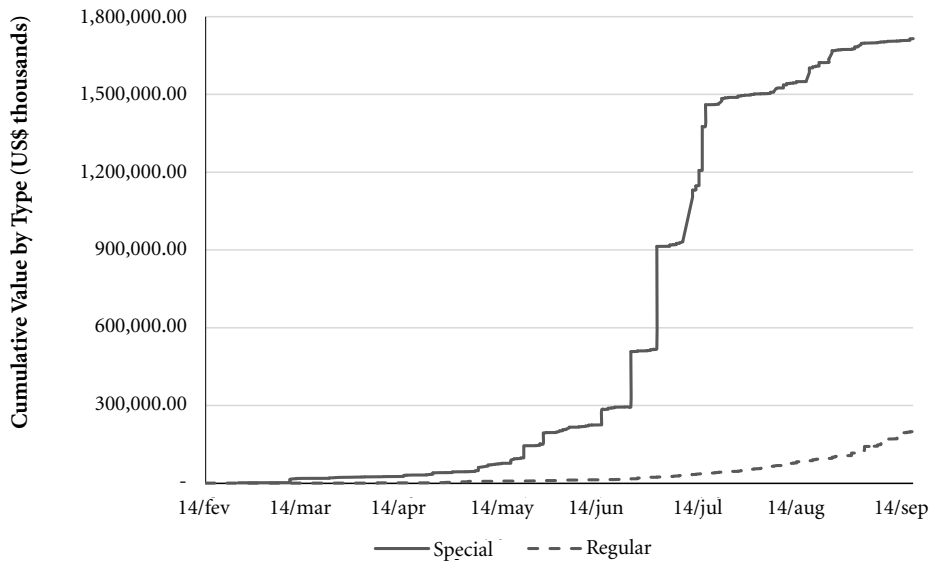
Date	Type	Company	Value (US\$ thousand)
29/5	Innovation	SnapDragon Chemistry Inc.	691.88
30/5	Domestic	Emergent BioSolutions	628,250.00
05/6	Vial	Corning Pharmaceutical Tech.	204,000.00
05/6	Vial	SiO2 USA	143,000.00
13/6	Package	ThermoFisher Scientific	49,189.40
23/6	Innovation	Colorado State University	699.99
01/7	Syringe	Retractable Technologies	53,664.29
01/7	Syringe	Becton, Dickson, and Co.	42,303.23
11/7	Syringe	Smiths Medical Inc	20,663.77
24/7	Domestic	Texas A&M University	264,693.06
06/8	Innovation	Grand River Aseptic Manuf.	1,600,000.00
06/8	Domestic	Emergent BioSolutions	30,000.00
27/8	Domestic	Ology Bioservices	106,300.00
Total			3,143,455.62

Source: Pharmaceutical Manufacturing in America at MedicalCountermeasures.gov (own elaboration), access on 24/9/2020.

Table 2. Main financial commitments of the Warp Speed Operation.

Date	Product	Doses (million)	Company	Value (US\$ thousand)
30/3	Vaccine (including manufacturing)		J&J (Janssen)	456,000.00
16/4	Vaccine (including manufacturing)		Moderna	483,000.00
12/5	Syringes (distribution)		Apject	138,000.00
16/4	Vaccine (including manufacturing)	300	AstraZeneca	1,200,000.00
01/6	Manufacturing capacity		Emergent BioSolut.	628,000.00
11/6	Vials (manufacturing distribution)		Corning	204,000.00
11/6	Vials (manufacturing distribution)		SiO2	143,000.00
07/7	Vaccine	100	Novavax	1,600,000.00
07/7	Antibody		Regeneron	450,000.00
22/7	Vaccine	100	Pfizer	1,950,000.00
26/7	Phase 3		Moderna	472,000.00
27/7	Manufacturing		Texas A&M	265,000.00
31/7	Vaccine	100	Sanofi/GSK	2,000,000.00
04/8	Manufacturing (package)		Grand River	160,000.00
05/8	Vaccine	100	J&J	1,000,000.00
11/8	Vaccine	100	Moderna	1,500,000.00
Total		800		12,649,000.00

Source: Fact Sheet: Explaining Operation Warp Speed at hhs.gov (own elaboration), updated on 24/9/2020.

**Figure 3.** NIH COVID-19 Research Investments.

Source: NIH Project RePORTER (own elaboration), updated on 19/9/2020.

values aligned with an already massive volume of resources spent annually on health, both taking advantage of the confidence in the currency as a world reference base, an availability of external capital that requires investments. Consequently,

leveraging innovative capacity in health becomes favorable.

In multilateral or national initiatives, the most frequent mechanism to guarantee the supply of diagnostics, therapies, or vaccines for COVID-19

are Advanced Market Commitments, with or without cost-sharing, and direct or indirect investments. Noteworthy, many American companies receiving resources from Warp Speed were also previously financed by global cooperation mechanisms. The Moderna, Curevac, and Inovio platforms received investment from the Coalition for Epidemic Preparedness Innovations, as did the University of Oxford³⁹. These previous developments for the Middle Eastern Respiratory Syndrome (MERS) were adapted for COVID-19 due to similarity, since both are coronaviruses. In another similar aspect the U.S. government agreed to pay US\$ 2,340 for treatment with Remdesivir (US\$ 390 per vial) and purchased 90% of the total production for three months, totaling 500,000 vials. However, estimates of the U.S. government's investment in R&D for this product range from at least US\$ 70.5 million⁴⁰ to US\$ 6.5 billion, the latter considering various studies funded by the NIH⁴¹. Furthermore, the valuation of company shares according to results or investment rounds is significant.

The 2019 Global Health Security Index⁴² report ranked the U.S. as the country with the best pandemic response preparedness. However, by relinquishing many means of response in favor of political issues, the American response to the pandemic reinforced individual responsibility in the choice of behavioral risks, leading to mistrust from people. Recent research shows that most Americans do not support universal health. However, they support public production and drug licensing⁴³. Political responses share this idea evidenced in the pricing, where health is harmed by an economic narrative instead of rights.

External influences affect the trend of global response. With 13% of the world population, the wealthiest countries have secured more than 51% of the estimated doses of vaccines⁴⁴. The U.S. has managed to secure about 800 million doses of vaccines, with the potential to purchase more than 1.5 billion, as provided for in the agreements. Considering its large population, this is lower than that guaranteed per capita by the United Kingdom and close to that provided by the European Union⁴⁵. Few peripheral countries have such potential access, further exacerbated if the probability of success in approval of developing vaccines is considered.

The institutional arrangement presented also reveals a striking internal aspect of productive investments. Despite historically having minimal vaccine manufacturing compared to Europe⁴⁶,

the U.S. has guaranteed 4 billion doses to be manufactured in its territory. In contrast, other countries with higher preexisting capacity, such as the United Kingdom and India, would manufacture around 1.5 billion doses each⁴⁵. Furthermore, when confronting nationalist efforts with a leading role in vaccines, it is necessary to expand beyond other products to prevent or fight COVID-19, evidenced by NIH research resources, with the possible repercussion of the values of American innovations in global access to health technologies.

Nationalism competes with solidarity initiatives. Global measures must be complemented by coordinated regional initiatives, with corresponding adjustments in national policies. This type of collaboration would be a more appropriate response to the pandemic, considering global interconnectivity. However, the U.S. seeks independent routes based on nationalist ideals facilitated by a robust economic-industrial health complex. Consequently, nationalism also spread through several countries in the world, whether in protectionist measures, disputes over influence, or local preferences, as in the recent case of the European Commission, which declared an interest in having an American-like body, explicitly quoting BARDA⁴⁷.

Considering the multiple technologies for responding to the pandemic, the supply-demand imbalance and dependence can affect economically peripheral countries like Brazil. The allocation of economic resources for innovations, primarily aimed at vaccines, increases the time preference of central countries. Access to technologies includes the timely, adequate availability, but funding capacity causes a deteriorating lag in the pandemic.

The imprecise conceptualization of forming a chain of solutions that later become accessible reflects the complex, transdisciplinary, and multifaceted nature of Public Health. Thus, the inconsistency between economic interests reflected in national identity and human rights challenges Public Health in the right to health and international relationships with its contemporary geopolitics' arrangements.

Final Considerations

Since the beginning of the pandemic, the world has been involved in a series of solidarity initiatives described in the introduction to this paper, aiming to ensure access to technologies related

to the diagnosis, prevention, treatment, and protection of populations, focusing on the need to expand these initiatives to resource-poor countries and neglected and vulnerable populations. Several countries have also established changes to their regulatory frameworks to facilitate this type of access. However, by not joining with any global or regional initiative and rooted in previous historical moments, the logistics and organization in the U.S. response can generate shortages in the process of fierce competition put into practice with the current procedures. This initiative can cause an imbalance between supply and demand for technologies worldwide.

In short, economic nationalism allowed a response by attending to economic interests rather than health. The prestige of coordinating a national response limited to commercial interests precludes practical solidarity in responding to the pandemic. Although the values of U.S. founders consider individual freedom, the collective perspective on the universal right to health depends on access to products considered to be public goods. The use as a political good always remains another threat, which can exclude neglected and vulnerable populations, harming global responses to this pandemic and other conditions for which solidarity is necessary.

Collaborations

Both authors participated in the development of this original article. FV Leineweber participated in the survey of references, data research and elaboration of the theme, while JAZ Bermudez collaborated in the design, development and final writing.

References

1. Guimarães R. Vacinas Anticovid: um Olhar da Saúde Coletiva. *Cien Saude Colet* 2020; 25(9):3579-3585.
2. Guimarães R. As Interfaces e as “Balas de Prata”: Tecnologias e Políticas. *Cien Saude Colet* 2020; 25(9):3563-3566.
3. Bermudez J, Leineweber FV. “Tecnologias de Saúde - Medicamentos e Vacinas: Bens Públicos Globais ou Disputa de Mercado”. In: Buss PM, Fonseca LE, organizadores. *Diplomacia Da Saúde e a Pandemia: Reflexões a Meio Do Caminho*. Rio de Janeiro: Editora Fiocruz; 2020.
4. Briana J, Bourland S. *Companies Keep Raising Prices in the Midst of a Pandemic* [Internet]. Patients for Affordable Drugs; 2020 [acessado 2020 Set 9]. Disponível em: <https://patientsforaffordabledrugs.org/2020/06/28/covid-price-hikes-report/>
5. Augustovski F, McClellan MB. Current Policy and Practice for Value-Based Pricing. *Value Health*. 2019; 22(6):S4-S6.
6. Health and Human Services (HHS) *Aquisiton Regulation* [Internet]. HHS. Sect. 335; 2015 [acessado 2020 Set 9]. Disponível em: <https://www.hhs.gov/grants/contracts/contract-policies-regulations/hhsar/part-335-research-development-contracting/index.html>
7. Berndt ER, Glennerster R, Kremer MR, Lee J, Levine R, Weizsäcker G, Williams H. Advance market commitments for vaccines against neglected diseases: estimating costs and effectiveness. *Health Economics* 2007; 16(5):491-511.
8. Hickey KJ, Ward EH. *Legal Issues in COVID-19 Vaccine Development* [Internet]. Congressional Research Service; 2020 [acessado 2020 Set 9]. Disponível em: <https://crsreports.congress.gov/product/pdf/R/R46399>
9. Government Accountability Office (GAO). *COVID-19 Federal Efforts Could Be Strengthened by Timely and Concerted Actions* [Internet]. United States GAO; 2020 [acessado 2020 Set 23]. Disponível em: <https://www.gao.gov/assets/710/709492.pdf>
10. Lepore J. A new Americanism: Why a nation needs a national story [Internet]. *Foreign Affairs*. 2019 [acessado 2020 Set 10]; 98(10). Disponível em: <https://www.foreignaffairs.com/articles/united-states/2019-02-05/new-americanism-nationalism-jill-lepore>
11. Kupchan C. The Clash of Exceptionalisms. *Foreign Affairs* 2018; (97):138.
12. Frank D. *Buy American the untold story of economic nationalism*. Boston: Beacon Press; 2005.
13. Carter ZD. *The price of peace: money, democracy, and the life of John Maynard Keynes*. New York: Random House; 2020.
14. Sachs J. *A new foreign policy: beyond American exceptionalism*. New York: Columbia University Press; 2018.
15. Offit PA. The Cutter Incident, 50 Years Later. *N Engl J Med*. 2005; 352(14):1411-1412.
16. Ochmann S, Roser M. *Polio* [Internet]. Our World in Data; 2017 [acessado 2020 Set 20]. Disponível em: <https://ourworldindata.org/polio>
17. Sencer DJ, Millar JD. Reflections on the 1976 Swine Flu Vaccination Program. *Emerg Infect Dis*. 2006; 12(1):23-28.
18. Jadeja S, Pai G, Bhat K, Sathyanarayana MB. President’s Emergency Plan for AIDS Relief. *SRP* 2018; 9(1):6-9.
19. Bush GW. *President Outlines Pandemic Influenza Preparations and Response* [Internet]. Bush White House Archives; 2005 [acessado 2020 Set 28]. Disponível em: <https://georgewbush-whitehouse.archives.gov/news/releases/2005/11/20051101-1.html>
20. Cohen J. *House Approves \$8 Billion for Swine Flu Pandemic* [Internet]. Science; 2009 [acessado 2020 Set 28]. Disponível em: <https://www.sciencemag.org/news/2009/06/house-approves-8-billion-swine-flu-pandemic>
21. Korecki N. *Biden has fought a pandemic before. It did not go smoothly* [Internet]. Politico; 2020 [acessado 2020 Set 28]. Disponível em: <https://www.politico.com/news/2020/05/04/joe-biden-contain-h1n1-virus-232992>
22. Obama B. *Remarks by the President Delivers at the Global Health Security Agenda Summit* [Internet]. Obama White House Archives; 2014 [acessado 2020 Set 14]. Disponível em: <https://obamawhitehouse.archives.gov/node/300511>
23. Kamarck E, Podkul A. *Role reversal: Democrats and Republicans express surprising views on trade, foreign policy, and immigration* [Internet]. Brookings; 2018 [acessado 2020 Set 10]. Disponível em: <https://www.brookings.edu/blog/fixgov/2018/10/25/role-reversal-democrats-and-republicans-express-surprising-views-on-trade-foreign-policy-and-immigration/>
24. Dujarric S. *Note to Correspondents in answer to questions regarding the World Health Organization* [Internet]. United Nations Secretary-General; 2020 [acessado 2020 Set 10]. Disponível em: <https://www.un.org/sg/en/content/sg/note-correspondents/2020-07-07/note-correspondents-answer-questions-regarding-the-world-health-organization>
25. Biden J. *The Biden Plan to Ensure the Future is “Made in All of America” by All of America’s Workers* [Internet]. Joe Biden for President: Official Campaign Website; 2020 [acessado 2020 Set 14]. Disponível em: <https://joebiden.com/made-in-america/>
26. Cohen J. *The United States badly bungled coronavirus testing—but things may soon improve* [Internet]. Science; 2020 [acessado 2020 Set 10]. Disponível em: <https://www.sciencemag.org/news/2020/02/united-states-badly-bungled-coronavirus-testing-things-may-soon-improve>
27. Health and Human Services (HHS), Assistant Secretary for Public Affairs (ASPA). *Rescission of Guidances and Other Informal Issuances* [Internet]. HHS; 2020 [acessado 2020 Set 10]. Disponível em: <https://www.hhs.gov/coronavirus/testing/recission-guidances-informal-issuances-premarket-review-lab-tests/index.html>
28. Health and Human Services (HHS), News Division. *Secretary Azar Declares Public Health Emergency for United States for 2019 Novel Coronavirus* [Internet]. HHS; 2020 [acessado 2020 Set 10]. Disponível em: <https://www.hhs.gov/about/news/2020/01/31/secretary-azar-declares-public-health-emergency-us-2019-novel-coronavirus.html>

29. Food and Drug Administration (FDA), *Emergency Use Authorization* [Internet]. FDA Office of the Commissioner; 2020 [acessado 2020 Set 10]; Disponível em: <https://www.fda.gov/emergency-preparedness-and-response/mcm-legal-regulatory-and-policy-framework/emergency-use-authorization>
30. Coronavirus Preparedness and Response Supplemental Appropriations Act. Pub. L. No. 116-123, 116th Cong. Jun 3, 2020.
31. Coronavirus Aid, Relief, and Economic Security Act (CARES Act) Sect. 3548, 116th Cong. Mar 6, 2020.
32. Health and Human Services (HHS), Assistant Secretary for Financial Resources (ASFR) [Internet]. Office of Budget (OB); 2019 [acessado 2020 Set 14]. Disponível em: <https://www.hhs.gov/about/budget/index.html>
33. Pandemic and All-Hazards Preparedness Act. Sect. 3678, Pub. L. No. 109-417, 109th Cong., 2006.
34. Project BioShield Act. Sect. 15, Pub. L. No. 108-276, 108th Cong., 2004.
35. Health and Human Services (HHS). *Fact Sheet: Explaining Operation Warp Speed* [Internet]. HHS; 2020 [acessado 2020 Set 20]. Disponível em: <https://www.hhs.gov/coronavirus/explaining-operation-warp-speed/index.html>
36. Slaoui M, Hepburn M. Developing Safe and Effective Covid Vaccines – Operation Warp Speed’s Strategy and Approach. *N Engl J Med* 2020; 383(18):1701-1703.
37. Florko N. *New chart reveals military’s vast involvement in Operation Warp Speed* [Internet]. Stat News; 2020 [acessado 2020 Set 29]. Disponível em: <https://www.statnews.com/2020/09/28/operation-warp-speed-vast-military-involvement/>
38. National Institutes of Health (NIH). *NIH-Wide Strategic Plan for COVID-19 Research* [Internet]. NIH; 2020 [acessado 2020 Ago 10]. Disponível em: <https://www.nih.gov/sites/default/files/research-training/initiatives/covid-19-strategic-plan/coronavirus-strategic-plan-20200713.pdf>
39. Christodoulou M. *CEPI Awards Contract Worth Up To USD\$19 million to Oxford University and Janssen Vaccines to Develop MERS, Lassa, and Nipah Vaccines* [Internet]. CEPI; 2018 [acessado 2020 Set 10]. Disponível em: https://cepi.net/news_cepi/cepi-awards-contract-worth-up-to-usd19-million-to-oxford-university-and-janssen-vaccines-to-develop-mers-lassa-and-nipah-vaccines/
40. Public Citizen. *The Real Story of Remdesivir* [Internet]. Public Citizen; 2020 [acessado 2020 Set 10]. Disponível em: <https://www.citizen.org/article/the-real-story-of-remdesivir/>
41. Cleary EG, Jackson MJ, Folchman-Wagner Z, Ledley FD. Foundational research and NIH funding enabling Emergency Use Authorization of remdesivir for COVID-19. *medRxiv*; 2020. doi: <https://doi.org/10.1101/2020.07.01.20144576>
42. Johns Hopkins Center for Health Security. *The Global Health Security Index* [Internet]. GHS Index; 2019 [acessado 2020 Set 17]. Disponível em: <https://www.ghsindex.org/>
43. Yglesias M. *Poll: Fixing drug prices is more popular than Medicare-for-all* [Internet]. Vox; 2020 [acessado 2020 Set 24]. Disponível em: <https://www.vox.com/2020/2/24/21134677/polling-progressive-ideas-medicare-for-all-drug-costs-climate>
44. Tabacek K. *Small group of rich nations have bought up more than half the future supply of leading COVID-19 vaccine contenders* [Internet]. Oxfam International; 2020 [acessado 2020 Set 17]. Disponível em: <https://www.oxfam.org/en/press-releases/small-group-rich-nations-have-bought-more-half-future-supply-leading-covid-19>
45. Callaway E. The unequal scramble for coronavirus vaccines – by the numbers. *Nature* 2020; 584(7822):506-507.
46. Lincicome S. *What if Politicians Are the Biggest Medical Supply Chain Risk?* [Internet]. Cato Institute; 2020 [acessado 2020 Set 17]. Disponível em: <https://www.cato.org/blog/whats-biggest-risk-facing-medical-supply-chains>
47. von der Leyen U. *State of the Union Address: charting the course out of the coronavirus crisis and into the future* [Internet]. European Commission; 2020 [acessado 2020 Set 29]. Disponível em: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1657

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