COVID-19 and Conflict: A Positive Feedback Loop

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Introduction

In early 2020, the world shut down. Borders, schools, restaurants, and places of worship closed while hospitals and cemeteries filled with the victims of an unknown respiratory disease. Almost two years later, the SARS-CoV-2 (COVID-19) pandemic still rages globally and the impacts are felt most deeply in countries without access to vaccines. While in 2021 borders have reopened, restaurants and worship houses are full, and children return to school, COVID-19 continues to threaten vulnerable people around the world. While the pandemic exposed many deficiencies in countries that are not at war, COVID-19 is bringing countries already suffering from long-lasting violent conflict to the brink of catastrophe.

Two of these countries, Yemen and Afghanistan, are experiencing the devastating effects of COVID-19 in tandem with other significant violent crises, creating unique humanitarian disasters. Yemen, in its sixth year of civil war, is divided between two warring factions, the Houthi rebels and the Saudi-US-backed coalition, with different approaches to mitigating the pandemic. In Afghanistan the U.S.-supported government was overthrown by the Taliban after the withdrawal of U.S. troops in August 2021. Given the difficulty of recording accurate information of COVID-19 cases and deaths, it is impossible to compare the two countries solely by the number of cases. Yet, the crises in Yemen and Afghanistan share several similarities relating to what I call the "positive feedback loop of COVID-19." A positive feedback loop is a process in which a change or disturbance in a system exacerbates the effects of the disturbance.[1] In this case, the disturbance is the introduction of COVID-19 into warzones and the effect is the ever-worsening damage from the pandemic. In other words, COVID-19 in Yemen and Afghanistan is a self-reinforcing disaster.

[1]Counterintuitively, a "positive feedback loop" does not suggest that the effects of that loop will necessarily be good, but instead that they reinforce each other (rather than negate each other in a "negative feedback loop"). In a positive feedback loop, A causes B which in turn causes more of A.

In this paper, I will compare the impact of the COVID-19 positive feedback loop on Yemeni and Afghan healthcare infrastructure and violence against healthcare workers. I will then discuss the failures of institutional responses to the pandemic as well as the effects of reductions in both remittances and funding to each country. Finally, I will compare the relative successes and failures of the respective vaccination campaigns to highlight the various effects of the COVID-19 feedback loop on Yemeni and Afghan society, governance, and healthcare.

COVID-19

COVID-19 or the Coronavirus disease is an infectious respiratory disease caused by the SARS-CoV-2 virus. First reported in Wuhan, China in December 2019, COVID-19 rapidly spread outward and was officially defined as a pandemic in March 2020. While many who are infected with COVID-19 are asymptomatic, about 80% of those who experience symptoms recover without hospitalization, while 15% become seriously ill and 5% require intensive care. Those above the age of 60 and those who have underlying medical conditions are more at risk of hospitalization or complications from COVID-19, though children can also develop a rare inflammatory syndrome.[2] Those with moderate and severe infections of COVID-19 are more susceptible to other diseases, especially those caused by Black fungus, because of long incubation periods and the use of steroids in treatment.[3] While the long-term effects are currently unknown, some who are no longer positive for COVID-19 still report continual fatigue, respiratory, and neurological symptoms, a phenomenon called "long COVID."[4]

COVID-19 can be detected by molecular tests such as a polymerase chain reaction (PCR). THE WHO recommends that those who test positive isolate for at least ten days or until

[2] World Health Organization. "Question and Answers Hub."
[3] Essar, Mohammad Yasir, Hiba Khan, et al. "Mucormycosis, Conflicts and Covid‑19: A Deadly Recipe for the Fragile Health System of Afghanistan."
[4] WHO, "Questions and Answers Hub."

their symptoms subside. Several vaccines have been developed to protect against COVID-19, including the Pfizer/BioNTech Comirnaty, the AstraZeneca/AZD122 vaccine, Johnson and Johnson's Janssen vaccine (J&J), the Moderna vaccine, and the Sinopharm vaccine.[5] Several variants have evolved since the initial outbreak of COVID-19, most recently the "Delta" variant. This variant is more transmissible than previous variants and is responsible for second and third spikes of the virus.[6] The most effective measures of preventing COVID-19 are sanitizing, mask-wearing, distancing, regular testing, and vaccination.[7]

As of October 15, 2021, there have been 239.4 million confirmed cases of COVID-19, 4.8 million confirmed deaths, and 6.5 million vaccine doses administered globally. Given the current state of Yemeni and Afghan healthcare infrastructure and response capability, the results of the COVID-19 pandemic are likely to be catastrophic for both countries.

Before COVID-19: Yemen

The current crisis in Yemen originated in the 1990s when North and South Yemen reunited and Ali Abdullah Saleh became the President of the Republic of Yemen. During this time the Iranian-supported Shia group Ansar Allah, also known as the Houthis, began gaining power. Periodic clashes between the Houthis and Saleh's government continued until a ceasefire in 2010 and Saleh agreed to cede power to his deputy, Abdrabbuh Mansour Hadi. Despite the new unity government, anti-government protests continued until September 2014 when the Houthis took control of Yemen's capital Sana'a. In exile in Saudi Arabia, President Hadi still claims to represent the legitimate government of Yemen in opposition to the Houthi coup. In 2015, The United States supported a coalition of Arab states led by Saudi Arabia in an offensive

[5] Ibid.
[6] CDC."Outbreak of SARS-COV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings - Barnstable County, Massachusetts, July 2021."
[7] WHO. "Questions and Answers Hub."

against the Houthis. Despite numerous efforts by the United States and the United Nations to sponsor ceasefires and peace talks, fighting has continued through 2021, creating one of the worst humanitarian crises in the world[8]

Since 2015, four million Yemenis have been displaced, 66% of whom still live in dangerous locations. 20 million people, two-thirds of the population, "are in dire need of humanitarian assistance"[9] and the severe economic decline during the war has led to severe malnutrition; 16 million Yemenis are food insecure and five million are on the brink of famine. 25% of displaced Yemeni families are headed by a woman or girl, 20% of whom are under 18 years old. In addition to violence and political crises, Yemenis are victims of climate change and experience regular flash floods that cause further displacement. Humanitarian agencies are limited in their ability to provide aid due to the ongoing hostilities between armed forces and recent budget cuts and supply chain restraints related to the COVID-19 pandemic.[10]

In March of 2020, United Nations Secretary-General António Guterres announced an "appeal for a global ceasefire [to] create conditions for the delivery of aid, to open up space for diplomacy, and bring hope to places among the most vulnerable to COVID-19."[11] While the Yemeni government, the Houthis, and Saudis initially agreed to the ceasefire, within a month the Houthis fired drones and missiles towards the Saudi capital, provoking an airstrike response from Saudi Arabia.[12] Most recently, Saudi Arabia has proposed new peace terms, including a ceasefire and re-opening some trade ports, but the Houthis rejected the offer because it did not completely lift the blockade on ports and airports.[13]

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[8] Council on Foreign Relations. "War in Yemen | Global Conflict Tracker."
[9] UNHCR. "Yemen Humanitarian Crisis."
[10] Lederer, Edith. "UN Warns COVID-19 Is 'Roaring Back' as Yemen Faces Famine."
[11] António, Guterres. "Update on the Secretary-General's Appeal for a Global Ceasefire," 7.
[12] Ibid.
[13] Yaakoubi, Aziz El. "Saudi Arabia Proposes Ceasefire in Yemen, Houthis Skeptical."

Before COVID-19: Afghanistan

The Afghan people have experienced forty years of chaos and conflict that intensified in the summer of 2021 when the Taliban, an Islamic fundamentalist group formed in the aftermath of the 1990s civil war, took control of Kabul. Two decades before, the United States launched a campaign against Taliban forces in Afghanistan that killed several hundred soldiers and civilians but failed to capture al-Qaeda leader bin Laden. NATO later assumed control of international security forces, though the United States maintained a constant presence. After U.S. forces killed bin Laden in 2011, NATO handed security control to Afghan forces in 2014, supporting a power-sharing agreement formed between President Ghani and Chief Executive Abdullah. As the Taliban continued to gain strength, the United States once again escalated forces and held negotiations between the United States and the Taliban in 2019, excluding the Afghan government. After neither party adhered to peace agreements and the Taliban refused to negotiate in the presence of foreign troops, the US and NATO began their withdrawal. On August 15, 2021, the Afghan government collapsed, President Ghani fled the country, and the Tablian began establishing their control over the entire country in the hope of forming an "open, inclusive, Islamic government."[14]

According to UNHCR, in the past four decades, 6 million Afghans have been displaced by conflict, violence, and poverty. There are currently 2.6 million registered Afghan refugees, the majority of whom are in neighboring Iran and Pakistan, while 3.4 million more people are internally displaced. Since January 2021 634,800 Afghans have been internally displaced, 80% of whom are women and girls. An additional 35,400 Afghans have been reported to require international protection in neighboring countries.[15] Half of the country lives in poverty and 14

[14] Council on Foreign Relations. "Timeline: U.S. War in Afghanistan."
[15] USA for UNHCR. "Afghanistan Refugee Crisis Explained"

million people, including two million children, are food insecure or severely hungry. Like Yemen, the Afghan people are experiencing severe danger from climate change; in June 2021 the government declared a drought, the second it has faced in four years.[16]

On April 1st, after Secretary-General Guterres announced his call for a ceasefire, the Taliban indicated they would institute a cease-fire in areas with confirmed COVID-19 cases, in addition to guaranteeing the safety and security of traveling health workers. While initially, the Taliban focused efforts on disease mitigation strategies, they continued to engage in violence in all areas, including those with confirmed COVID-19 cases.[17] In the months following, failed negotiations for ceasefires during Ramadan or exchanges of prisoners continued until the Taliban took Kabul in August 2021 [18]

COVID-19 by the Numbers

COVID-19 Cases in Yemen

As of October 15, 2021, there have been 9,467 confirmed cases of COVID-19, 1,793 confirmed deaths, and 356,173 vaccine doses administered in Yemen.[19] In late March 2021, Médecins sans Frontières reported "a dramatic influx of critically ill COVID-19 patients requiring hospitalization" representing Yemen's second wave.[20] On September 22, 2021, Oxfam reported that recorded cases of COVID-19 in Yemen's third wave were three times higher and the death rate five times higher than in August 2021. These recorded numbers exclude those who cannot receive a test or do not have access to medical care, especially those in the Houthi-controlled north. Therefore, the numbers of COVID-19 cases and deaths in Yemen are

[16] OCHA. "Asia and the Pacific: Weekly Regional Humanitarian Snapshot June 22, 2021."
[17]ACLED. "A Call Unanswered: A Review of Responses to the UN Appeal for a Global Ceasefire."
[18]Reuters. "Foreign missions in Afghanistan call for a Taliban ceasefire." *Reuters.* 19 July 2021. https://www.aljazeera.com/news/2020/4/24/afghanistan-taliban-rejects-call-for-ceasefire-during-ramadan
[19] World Health Organization. "Yemen: WHO Coronavirus Disease (Covid-19) Dashboard with Vaccination Data."
[20] Médécins sans frontières, "COVID-19 Support Desperately Needed as Second Wave Overwhelms Yemen.

likely much higher than recorded. The UN humanitarian coordinator in Yemen projects that 16 million people, 55% of the population, will be infected with COVID-19, requiring 300,000 hospital beds and 200,000 ICU beds, far above Yemen's current capacity.[21] The numerous crises of famine, violence, and disease have led Yemen having "one of the highest COVID fatality rates in the world,"[22] for a virus that has killed millions in countries that are not in the midst of a decades-long conflict.[23]

COVID-19 Cases in Afghanistan

As of October 15, 2021, there have been 155,682 confirmed cases of COVID-19 in Afghanistan, with 7,238 confirmed deaths and 2.5 million vaccine doses administered. Similar to Yemen, the true numbers of cases and deaths are likely higher, as Afghanistan lacks resources and testing capacity.[24] The second wave saw cases surge into the hundreds and thousands during the winter months[25] and an exponential increase of thousands of cases in June 2021 marked the beginning of the third wave of the pandemic in Afghanistan, this time driven by more contagious variants.[26] The increase in conflict after the Taliban takeover in August 2021 may also impact the number of people getting tested and the number of tests reported. Like the Yemeni population, war-battered Afghans are also highly vulnerable to the virus, which could lead to higher death rates than predicted. The Afghan Public Health Ministry estimated that 25.6 million Afghans would be infected and 100,000 would die, though the true cost could be far higher.[27]

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[21]Alterman, Jon. "Online Event: Crisis and Survival amidst Covid-19 in Yemen."
[22]Oxfam International. "Yemen at tipping point as Covid-19 second wave hits amid renewed fighting and famine fears."
[23] World Health Organization. "Yemen: WHO Coronavirus Disease (Covid-19) Dashboard with Vaccination Data."
[24]Lucero-Prisno, Don Eliseo, et al. "Conflict and Covid-19: A Double Burden for Afghanistan's Healthcare System."
[25]Saif, Shadi Khan. "2nd Covid-19 Wave Hits Afghanistan with Case Surge."
[26]Hadid, Diaa. "A Crippling 3rd Wave of Covid Adds to Afghanistan's Woes."
[27]Jackson, Ashley. "For the Taliban, the Pandemic Is a Ladder."

Healthcare Infrastructure

The positive feedback loop of COVID-19 has further degraded Yemen and Afghanistan's struggling healthcare systems by overwhelming hospital capacity and staff. This in turn leads to a lack of testing and personal protective equipment that has allowed the virus to spread faster and take more lives in both countries.

Healthcare Infrastructure in Yemen

Yemen lacks essential healthcare infrastructure and disaster emergency preparedness[28] and COVID-19 is only the most recent health crisis to hit Yemen in the past decade**.** In 2016 Yemen endured "the worst cholera outbreak in modern history,"[29] suspected to have infected 2.5 million people and killed almost 4,000.[30] While the number of cholera cases has declined, hospitals are still under strain from the emergence of COVID-19, other diseases such as diphtheria and measles, and war casualties. As Yemen's population already has "acute levels of vulnerability," low levels of immunity, and an unequipped healthcare system, the respiratory virus is likely to spread faster and kill more than it would in countries with strong healthcare infrastructure and higher immunity against most diseases.[31]

At the beginning of the pandemic in March 2020, Yemen had no more than 500 ventilators and 700 ICU beds.[32] In April 2020 the WHO equipped 37 hospitals with the necessary supplies for ICU wards, repurposing materials and strategies used during the cholera outbreak.[33] Several Yemeni health workers have been paid and trained by the WHO and UNICEF to perform contact tracing and roll out public education campaigns about the dangers of COVID-19.

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[28] Lucero-Prisno, Don Eliseo, et al, "Conflict and COVID-19."
[29] Alterman, "Crisis and Survival."
[30] WHO. "Cholera situation in Yemen: December 2020."
[31] Alterman, "Crisis and Survival."
[32]Save the Children International. "More than 15 Million Children and Their Families in Yemen, Syria and Gaza Set to Face Covid-19 with Fewer than 1,700 Ventilators and Beds."
[33] Alterman, "Crisis and Survival."

However, government and private health workers report a lack of payment and shortages of personal protective equipment and medication due to restrictions on imports.[34] One medical worker in Sana'a reported that the continuous COVID-19 waves were overwhelming public health capacities. Testing is practically unavailable, and most cases are assumed to be COVID-19 based solely on symptoms. Most of those thought to have COVID-19 are asked to stay home because medical facilities are at capacity. 97 health workers in Yemen died of COVID-19 in 2020, most of whom were in Houthi-controlled Sana'a.[35] Daily threats of violence against health workers, along with the inherent danger of working with COVID patients, especially without proper equipment, have led to an exodus of health workers from the country.[36] The group *Yemeni Doctors in the Diaspora* posted on Facebook on April 25th, 2021 calling for supranational, international, and local organizations to aid in the deliverance of vaccines and medication to all Yemeni regions. They "warn that the escalating deaths of health personnel will lead to the collapse of the dilapidated health systems in Yemen."[37]

Healthcare Infrastructure in Afghanistan

The former Afghan government failed to immediately address the threat of COVID-19 in March 2020, when 200,000 Afghans returned from Iran, fleeing one of the first COVID-hotspots in the Middle East. The Afghan government did not mandate testing or isolation of any of these migrants, even those who had symptoms.[38] Hospitals were already underfunded, without money for testing, care, or even the collection of the dead. In June of 2021, more than a year after the pandemic began, the Afghan Ministry of Public Health reported that Afghanistan only had 2,000 oxygen concentrators and 1,000 hospital beds for COVID-19 patients in a country of 40 million

[34]Save the Children International. "More than 15 Million Children and Their Families in Yemen, Syria and Gaza Set to Face Covid-19 with Fewer than 1,700 Ventilators and Beds."
[35]UIC, MedGlobal, and Project Hope. "A Tipping Point for Yemen's Health System."
[36] Lucero-Prisno, Don Eliseo, et al, "Conflict and COVID-19."
[37]Yemeni Doctors in the Diaspora. "An urgent distress call from Yemeni Doctors in the Diaspora."
[38]Mehrdad, Ezzatullah. "How Afghanistan Failed to Contain Covid-19 ."

people.[39] The Afghan-Japan Communicable Disease Hospital and the Ali Jinnah Hospital, both in Kabul, are the two main hospitals designated specifically for COVID-19 patients in the country. In 2021 both hospitals had to close their doors to COVID-19 patients during peak waves because they did not have enough beds, ventilators, or oxygen supplies.[40]

Due to the failure of the government to effectively provide COVID-related information or to the apathy on the part of the citizenry amid multiple crises, some Afghans ignore protective precautions and COVID-related symptoms altogether.[41] The hospitals themselves lack basic transmission prevention measures such as masking and distancing. At the Afghan-Japan Hospital, 90% of the staff had been infected by November of 2020, and almost 3000 health care workers across the country were confirmed to have COVID-19.[42] In one non-COVID-19 designated hospital, the Kunduz Regional Hospital, 20% of the staff was COVID-19-positive or suspected to have the virus. Though the hospital logically should have closed and quarantined all staff and patients, as the only health facility for thousands of Afghans they were forced to stay open.[43] Like Yemen, most cases are assumed to be COVID-19 based on symptoms. Early in the pandemic, the tests took days to weeks to produce results, by which point many had recovered or died, far more at home than in hospitals. Family members without any medical experience or protective equipment are left to take care of their loved ones, whether at home or in hospitals guarding oxygen tanks against those looking to steal them.[44] Mirroring the Yemeni doctors' Facebook plea for help, the WHO warned in September 2021 that "Afghanistan's health system is on the brink of collapse" after donors cut funding to essential health projects.[45]

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[39]Amnesty International. "Afghanistan: Oxygen and Vaccines Urgently Needed as COVID-19 Infections Surge."
[40]Birsel, Robert, ed. "Full Hospitals in Afghanistan Close Doors to New Patients as COVID-19 Surges." h
[41]Zucchino, David, and Fahim Abed. "'Covid Can't Compete.' in a Place Mired in War, the Virus Is an Afterthought." https://www.nytimes.com/2020/12/20/world/asia/covid-afghanistan-coronavirus.html.
[42]Cousins, Sophie. "Afghanistan Braced for Second Wave of COVID-19."
[43]Zucchino and Abed, "Covid Can't Compete."
[44]Akhgar, Tameem. "Families Step in at Kabul Covid-19 Ward to Care for Patients."
[45]WHO EMRO. "Acute health needs in Afghanistan must be urgently addressed and health gains protected."

Violence Against Healthcare Workers

Violent targeting of healthcare centers and workers is not unique to the COVID-19 pandemic but presents an additional challenge in the response to and containment of the most recent health crisis. In the COVID-19 positive feedback loop, violence in response to the virus put healthcare workers in more danger and dissuaded civilians from seeking care, thereby causing an unnecessary but significant increase in COVID-19 cases and deaths.

Yemen

Healthcare workers in Yemen are routinely subjected to violence, whether bombing from warring parties or interpersonal attacks. The Safeguarding Health in Conflict Coalition (SHCC) found incidents of violence against healthcare workers in Yemen increased by 130% between 2019 and 2020.[46] Saudi-led coalition bombs damaged three COVID-19 quarantine centers in Al Bayda and Al Hudaydah and Houthi forces shelled a coronavirus testing team in Ma'rib. Healthcare workers do not only face targeting from militant groups but in individual settings, from patients and families. One doctor in Aden reports having been threatened with a gun to provide a family member with oxygen despite the hospital lacking oxygen and ventilators. He adds that these threats happen routinely in the hospital in Aden and that "some of his colleagues at the hospital have stopped working because they fear for their lives."[47] The danger of being in a healthcare facility and the lack of available resources for patients reduces the number of people in Yemen who are willing to go to a hospital to receive care for COVID-19, increasing the number of cases and deaths in the country.

[46]Safeguarding Health in Conflict Coalition. *No respite: Violence against Health Care in Conflict.*
[47]Gharib, Malaka. "'I Will Kill You': Health Care Workers Face Rising Attacks amid Covid-19 Outbreak."

Afghanistan

Like in Yemen, Afghan healthcare workers, already facing danger from the transmissibility and severity of COVID-19 without adequate personal protective equipment, are at increased risk of violence from militant groups. Unlike Yemen, SHCC reported that the high incidence of violence against healthcare workers in Afghanistan did not dramatically change between 2019 and 2020, remaining around 100 attacks.[48] Still, violence from those opposing COVID-19 preventative measures or spreading misinformation about the virus makes COVID-19 a contributing factor to the violence incidence in Afghanistan. In early 2020, The Taliban abducted three healthcare workers raising awareness about COVID-19 and over a year later the whereabouts of these workers are still unknown. In May 2020, gunmen stormed a hospital in Kabul, targeting a maternity ward supported by Médécins Sans Frontières, killing 24 people including 15 mothers and two children.[49] While responsibility for the attack is unknown, the message is clear: hospitals are unsafe. Threats, hostilities, and explosive devices have forced healthcare facilities to temporarily or permanently shut down, depriving millions of people of access to healthcare.[50] In both Yemen and Afghanistan the dangerous conditions have caused a mass outward migration of healthcare workers, leaving those who seek treatment to rely on family members or die.

Institutional Responses

COVID-19 presented an unprecedented challenge to governments in Yemen and Afghanistan already struggling to maintain control of their territories while battling several other diseases and violent conflicts at once. The inability or refusal of institutions to effectively

[48]SHCC. *Violence against Health Care in Conflict,* 21
[49]Ibid, 22
[50]Ibid, 22

respond to the COVID-19 pandemic contributes to COVID-19's positive feedback loop because their refusal to enforce virus-mitigation policies prolongs and intensifies the health crisis.

Houthi Suppression of COVID-19 Information

While the government controlling the southern portion of Yemen has recognized the danger of COVID-19 and reported most available statistics, the Houthi government actively obstructs efforts to reduce the spread of the virus in their controlled territory, only reporting four cases and one death.[51] Several Houthi officials, including the Minister of Health, the director of the Criminal Investigation Department, are rumored to have been infected with and died of COVID-19. Houthi leader Abdul Malik Al-Houthi has dismissed the pandemic as an "American conspiracy," claiming Americans are using COVID-19 as a biological weapon to their advantage.[52] In northern Yemen, COVID-19 testing is scarce and results are rarely released. The Houthis do not enforce mitigation measures such as mask-wearing and social distancing and suppress COVID-related statistics by punishing those who speak out. Moreover, Houthi special intelligence has threatened and intimidated health workers to prevent them from disclosing the state of the pandemic in their controlled areas. Most information is reported by civilians under the condition of anonymity or secretly recorded on phones.

Under the guise of protecting Yemeni psychological health, the Houthi officials refuse to publicize the number of positive cases and deaths.[53] Other senior members of the Houthi government have defended the suppression of COVID-related statistics to prevent a mass panic that would further destabilize the region.[54] However, the lack of information coming from authorities in tightly controlled Northern Yemen has led to rumors of doctors performing "mercy

[51]Human Rights Watch. "Yemen: Houthis Risk Civilians' Health in COVID-19."
[52]Ibid.
[53]Michael, Maggie. "Yemen's Rebels Crack Down as Covid-19 and Rumors Spread."
[54]Human Rights Watch. "Houthis Risk Civilians' Health."

injections" by lethally injecting COVID-19 patients.[55] These rumors, along with Houthi suppression of information, prevent people from seeking medical care. In June 2020, only a few months after the first confirmed case of COVID-19 in Yemen, burials were already occurring daily and some cemeteries were already full in the capital, Sana'a.[56]

Taliban Propaganda

Compared to the Houthi denial, the Taliban has displayed a willingness to implement protective measures against COVID-19, though most of them appear to be facades. In March 2020, the Taliban released a video displaying members wearing surgical masks, performing temperature checks, sending out COVID-19 public information teams, and setting up quarantine centers. They also required quarantines for those returning from Iran to Taliban-occupied areas when the Afghan government failed to do so. Blaming the spread of COVID-19 on both the entry of outsiders and a weak state response, the Taliban took advantage of the pandemic in the early stages to strengthen its legitimacy in Afghanistan.[57] However, when Kabul fell to the Taliban in August 2021, Afghanistan was already in its third wave of the pandemic and woefully unprepared. Despite their purported efforts to combat the virus, the Taliban have contributed to a worsening of the health crisis in Afghanistan by closing the Kabul airport to commercial flights, preventing more than 500 tons of medical supplies from the WHO from entering the country.[58] The combined effect of drought, food and drug shortages, lack of outside funding, and worsening health conditions from the virus have created a state of disaster for the new Taliban leadership.

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[55]Michael, Maggie. "Yemen's Rebels Crack Down."
[56]Human Rights Watch. "Houthis Risk Civilians' Health."
[57]Jackson, Ashley. "For the Taliban, the Pandemic Is a Ladder."
[58]Emma Farge. "Kabul Airport Curbs Blocking Medical Supplies for Afghans -WHO."

Reductions in Funding and Remittances

Another aspect of the positive feedback loop of COVID-19 is the intensification of the crisis because of a slowdown in outside financial assistance in the form of remittances and foreign aid. Without adequate funding, local organizations lack the necessary personal protective and medical equipment to lessen the transmission and mortality rate of COVID-19.

Yemen

The prolonged nature of the war and lack of Houthi cooperation in Yemen has led to a reduction in funding necessary for the continuance of humanitarian program's malnutrition programs, camps for displaced populations, and distribution of personal protective and hygiene equipment. In Yemen, 80% of the 12 million Yemenis who receive food assistance from the World Food Programme are in Houthi-controlled areas, where donors such as USAID have scaled down assistance in response to Houthi hindrance of aid delivery. The Houthis have delayed project approval, blocked aid assessments, and committed violent attacks against humanitarian workers and technological assets.[59] Donors are unwilling to provide support without assurances that the intended recipients will receive their assistance. As a result, "WFP's operation in Yemen is now facing a critical funding shortage and is left with no choice to reduce assistance by half to avoid a full stop of assistance in the future."[60] Other UN agencies have received less than half of their funding requests from international donors, decreasing the likelihood that Northern Yemen will receive a fraction of the assistance it requires.

In addition to a decrease in foreign aid, a drop in remittances to Yemen from Yemenis abroad since the beginning of the COVID-19 pandemic has resulted in further economic hardship. In 2019, before the onset of the pandemic, remittances provided around 13% of

[59]Barrington, Lisa. "WFP to Halve Food Aid in Houthi Yemen as Funding Drops."
[60]Ibid.

Yemens' GDP, but as Yemenis working abroad were unable to work due to lockdowns or low oil prices, remittances dropped by as high as 70% in early 2020 and remained low for the rest of the year. All Yemeni households experienced income loss in 2020 and the poorest and most rural households were hit especially hard, with an income loss of approximately 21%.[61] The decreased amount of money flowing into the country from remittances and foreign aid has worsened Yemenis ability to respond effectively to the pandemic, forcing people to work instead of staying home to prevent virus spread and limiting the amount of available medical supplies.

Afghanistan

Like in Yemen, Afghan citizens are facing severe shortages of essential supplies because of decreases in outside funding and remittances in the wake of the pandemic shutdowns and Taliban blockades. Nearly six million Afghans have been displaced during the four decades of crises, with 2.6 million living in other countries, namely Pakistan and Iran.[62] According to the World Bank, "Afghan households rely on migration to counterbalance insecurity and lack of local employment opportunities" and at least 7% of the country relies on remittances as a source of income.[63] In the case of COVID-19, out-of-pocket health expenditures already made up a significant portion of Afghan consumption and will only increase for COVID-19 treatment and other health services.[64] Reductions in remittances, which serve as lifelines for millions of Afghans, further exacerbate the multiple crises Afghan citizens are facing at once.

On a global level, supranational and humanitarian organizations are not only facing funding shortages but enacting funding freezes in response to the Taliban takeover of the country. In August 2021, the World Bank and other organizations froze $600 million in healthcare aid to

[61]Elsabbagh, Dalia, and Sikandra Kurdi. "Model: Impact of Falling Remittances amid COVID-19 on Yemen's War-Torn Economy."
[62]UNHCR."Afghanistan Refugee Crisis Explained."
[63]Samuel Hall. COVID-19 in Afghanistan: Knowledge, Attitudes, Practices and Implications."
[64]Dastan, Ilker, Asiyeh Abbasi, et al. "Measurement and Determinants of Financial Protection in Health in Afghanistan."

Afghanistan and other donors are reluctant to dispense money to a group designated as terrorists by the United States.[65] This reduction in funding will impact not only the COVID-19 response, but other essential health services such as polio and tuberculosis immunizations, malaria and HIV treatment, and nutrition programs, and maternal health services. Without improved humanitarian access to aid those affected by conflict, displacement, drought, and disease, the WFP warns of an even greater humanitarian catastrophe in Afghanistan within the next year.[66] As seen in both Yemen and Afghanistan, the COVID-19 pandemic led to higher levels of economic insecurity for civilians, thereby decreasing their access to healthcare and increasing the difficulty of the mitigation and treatment of COVID-19.

Vaccinations

While vaccines are the most effective measure of combatting the virus, the inability and failures of Afghanistan and Yemen to hold wide-reaching vaccination campaigns perpetuate the COVID-19 positive feedback loop. COVAX, an international vaccine-production coalition, aims to accelerate the development and distribution of vaccines globally, promising doses for at least 20% of the recipient country's populations.[67] For low- and middle-income countries, COVAX is the primary source of access for vaccines, accepting donations from wealthier countries as well as forming bilateral deals with manufacturers.[68]

Yemen

At the end of March, COVAX delivered 360,000 AstraZeneca vaccines to Aden, Yemen, along with thousands of safety boxes and millions of syringes. Yemen is scheduled to receive 1.9 million vaccine doses throughout the year 2021.[69] Yemen's internationally recognized

[65]Mandavilli, Apoorva. "Health Care in Afghanistan Is Crumbling, Aid Groups Warn."
[66]Ahmad, Ayesha, Rassa N., et al. "Urgent health and humanitarian needs of the Afghan population under Taliban."
[67]World Health Organization. "COVAX."
[68]Gavi. "COVAX Explained."
[69]UNICEF. "Yemen Receives 360,000 Covid-19 Vaccine Doses through the COVAX Facility."

government began a targeted vaccine campaign in its controlled areas in April 2021 and between April 20th and May 25th, 53,587 people received COVID-19 vaccines from the WHO, UNICEF, and the King Salman Humanitarian Aid and Relief Center, prioritizing health workers and those over the age of 60.[70] As of September 27th, 2021, nearly 260,000 people are partially vaccinated while 48,000 are fully vaccinated.[71] The number of promised vaccines from COVAX and donor countries is far from enough to vaccinate Yemen's population of 30 million. In September 2021 Yemen's top diplomat, Ahmed Awad Bin Mubarak appealed to the United Nations for the delivery of more vaccines and blamed the Houthi rebels for obstructing peace talks and prolonging the pandemic.[72]

The Houthis have had a longstanding opposition to vaccines, having prevented children from receiving measles and polio vaccines in 2013 and threatening health workers who carried out the vaccination campaign.[73] After intense negotiations with Houthi authorities, the WHO was initially to provide 10,000 vaccine doses to the Houthi-controlled portions of Yemen, but the number later was reduced to 1,000 and the Houthis refused to provide the vaccines under the supervision of the WHO or other related media. The WHO refused to comply with Houthi demands, meaning no vaccines have been distributed in Houthi-controlled areas. The absence of a significant vaccine campaign in most of Yemen will prolong the COVID-19 pandemic and further strain the remains of Yemen's healthcare system.

Afghanistan

While COVAX reports delivering over 4 million doses to Afghanistan, only one-third of these doses have been administered for Afghanistan's population of 40 million people.[74] As of

[70]Sabaant. "53,587 citizens have been vaccinated against Corona since the launch of the campaign."
[71]Ritchie, Hannah, Edouard Mathieu, et al. "Coronavirus (COVID-19) Vaccinations - Statistics and Research."
[72]Hyde, Maggie. "Yemen Uses UN Speech to Call for More Covid-19 Vaccines."
[73]Al-Hakami, Aleh. "The Houthis threaten the immunization teams in Saada with liquidation if they return to work."
[74]Guarascio, Francesco. "U.N. Sees Massive Drop in Covid Vaccinations in Afghanistan after Taliban Takeover."

October 9, 2021, 1.6 million individuals have been fully vaccinated (5.3% of the total population), and 846,690 have been partially vaccinated (2.8% of the total population).[75] Active fighting has significantly affected vaccination programs against COVID-19 and other diseases such as polio and measles.[76] While the WHO is working with partners to scale up COVID-19 vaccination, there are currently 2 million doses of the Johnson & Johnson vaccine in the country that will expire in November 2021.[77]

Similar to Yemen, the vaccine rollout in Afghanistan has been significantly stymied by insurgent group opposition to vaccination. Before the Taliban takeover, the former President of Afghanistan declared his "unwavering support" for the COVID-19 vaccine and began the vaccine rollout in 2021, accepting doses of the vaccine from COVAX and the United States.[78] However, vaccination efforts in Afghanistan have stalled since the Taliban takeover. Already responsible for preventing polio vaccination efforts in their controlled regions of Afghanistan,[79] the Taliban are unlikely to implement an aggressive vaccination strategy against COVID-19. The *Hindustan Times* reported in August 2021 that the Taliban had banned the COVID-19 vaccine in eastern Afghanistan's Pakita region[80] and in the week following the Taliban takeover of Kabul, vaccinations in Afghanistan dropped by 80%.[81] Therefore, similarly to Houthi-controlled areas in Yemen, Afghans are unable to access vaccines that have been made available for them from COVAX and international donations. The lack of access to vaccines will prolong the pandemic in both countries, exacerbating the health and economic disasters in these areas.

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[75]World Health Organization. "Covid-19 Epidemiological Bulletin, Afghanistan: Epidemiological Week 40. 3-9 October 2021. https://reliefweb.int/sites/reliefweb.int/files/resources/weekly-epidemiological-bulletin_w40.pdf
[76]World Health Organization. "WHO News Updates: August 17th: Afghanistan"
[77]World Health Organization. "Afghanistan Emergency Situation Report"
[78]"President of Afghanistan Declares 'Unwavering Support' for a People's Vaccine for Covid-19."
[79]National Emergency Action Plan. "Polio Eradication Initiative, Afghanistan." p.21
[80] *Hindustan Times.* "Afghanistan: Taliban reportedly bans Covid vaccine in Pakita."
[81]Guarascio, Francecso. "UN Sees Massive Drop in Covid Vaccinations."

Conclusion

In the COVID-19 positive feedback loop, the introduction of the pandemic worsened the pre-existing humanitarian crises in Yemen and Afghanistan, which in turn exacerbated the effects of COVID-19 in these regions. Before the pandemic, both Yemen and Afghanistan had strained and damaged healthcare infrastructure with a lack of institutional support for healthcare workers and patients seeking treatment. The COVID-19 pandemic further degraded the Yemeni and Afghan healthcare systems by increasing the demand for an already scarce number of health services, medical supplies, and workers. COVID-19 misinformation and fury fueled violence against healthcare workers and prevented civilians from seeking or providing essential health services, thereby worsening the effects of the pandemic. Governmental failure to prevent the spread of the virus in Yemen and Afghanistan also contributed to the intensification of the crisis and increased political instability. While the Taliban initially promoted COVID-safety policies and prevention methods, the August 2021 subsequent Taliban overtake of Kabul worsened the pandemic by causing massive supply shortages similar to the Yemeni Houthi rejection of aid and suppression of essential COVID-19 information and statistics. Both Afghanistan and Yemen have experienced significant reductions in outside funding and remittances as a result of the pandemic and political crises, both of which are necessary to sustain the health and livelihoods of civilians and control the spread of COVID-19. Finally, while the former Afghan government was leading a vaccine campaign, the Taliban's known aversion to vaccination mirrors that of the Houthis, who have prevented vaccination in their controlled regions of Yemen. The positive feedback loop of COVID-19 has exacerbated the political, economic, and health crises in Afghanistan and Yemen, prolonging the pandemic and worsening the already catastrophic effects across both countries.

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