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## Great Disaster: The Impact of COVID-19 on Yemen

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## Great Disaster: The Impact of Civil War and COVID-19 on Yemen

When the Arab Spring started in 2011, Yemen was one of the countries that revolted against its government. The Arab Spring created a pathway for a civil war that started in 2015 and is still ongoing. The Yemen crisis has hit its citizens hard and has resulted in a great number of casualties. Hundreds of thousands have lost their lives due to the civil war and many have been displaced from their homes. Food insecurity has risen as a result of the war and the number of Yemenis who are at risk of starvation is estimated to be 8.4 million.<sup>1</sup> Before the civil war, the Yemen Global Acute Malnutrition (GAM) rate stood at 12.7%.<sup>2</sup> GAM rates show the nutritional status of a given population and are used to determine the seriousness of a humanitarian crisis.<sup>3</sup> After the start of the war, Yemen's GAM rate rose above the global emergency level of 15%, with some areas in Yemen reaching a 30% GAM rate.<sup>4</sup> The country's food crisis left many women and children impoverished and without food or clean water to care for. In its already fragile state, Yemen is also experiencing the COVID-19 pandemic. The pandemic is causing more harm to the country by worsening instability and fragility in an environment already ravished by war. Among its various challenges are food shortages, disease outbreaks, damaged infrastructures and a collapsed healthcare system. Current reports show that COVID-19 has further escalated the alarming issues Yemen is currently facing. But due to chaotic situation, it is difficult to know the actual impact of the pandemic on the country.

### Background of the Crisis

In 2014, a civil war broke out in Yemen when the Houthis, an Islamic group based in Northern Yemen, took control of the capital Sana'a.<sup>5</sup> In early 2015, the Houthi movement expanded southward from the capital to Aden on the coast of the Arabian sea.<sup>6</sup> The expansion of the Houthis led to Yemeni President Abdu Rabbu Mansor Hadi fleeing to Saudi Arabia in March 2015 and calling for intervention from other countries.<sup>7</sup> This made Saudi Arabia assemble many of its Arab partners, including Bahrain, Qatar, and Egypt, and initiated a military attack to restore Hadi's regime and remove Houthi fighters from the capital and other major Yemeni cities.<sup>8</sup> The civil war is not binary (i.e. Saudi-led army vs the Houthis) as multiple fighters are involved, and their alliances have been somewhat fluid.<sup>9</sup> Iran is also in the mist of the Yemen crisis. There have been allegations of Iran supporting the Houthis although Iran has vehemently denied the allegations. Countries such as the United States and Saudi Arabia have accused Iran of smuggling advanced weapons such as rockets launchers and missiles into Yemen which is a violation of the United Nations arms embargo.<sup>10</sup> The involvement of Iran and Saudi Arabia in

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<sup>1</sup> Larissa Alles, "Missiles and Food: Yemen's Man-Made Food Security Crisis." ReliefWeb, December 2017. <https://reliefweb.int/sites/reliefweb.int/files/resources/bn-missiles-food-security-yemen-201217-en.pdf>.

<sup>2</sup> Ibid., 4.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Congressional Research Service, *Yemen: Civil War and Regional Intervention*, by Jeremy M. Sharp. R43960, March 12, 2021.

<sup>6</sup> Sharp "Yemen: Civil War and Regional Intervention"

<sup>7</sup> Ibid.

<sup>8</sup> Ibid.

<sup>9</sup> Sharp, "Yemen: Civil War and Regional Intervention"

<sup>10</sup> "Yemen Crisis: Why is there a war," BBC, November 2, 2021, <https://www.bbc.com/news/world-middle-east-29319423>

Yemen has created a proxy war between the two regional powers. This can be likened to the cold war between the United States and Soviet Union. The regional struggle for dominance and influence between Iran and Saudi Arabia amid the Yemen crisis is as a result of religious divides which regrettably informs persuasions and beliefs in Islam. The two countries follow one of two main branches in Islam. Majority of Shia Muslims are in Iran while Saudi Arabia views itself as a leading Sunni Muslim power.<sup>11</sup> Al-Qaeda has also benefited from the war in Yemen, as they have increased their influence by providing security and public service to Yemenis in some areas.<sup>12</sup> Moreover, in the summer of 2019, long-boiling tensions between the internationally recognized Republic of Yemen and the secessionist Southern Transitional Council resulted in open warfare between the local allies, Saudi Arabia and the United Arab Emirates. Although both the Republic of Yemen and the Southern Transitional Council have agreed to share power in a coalition government, periodic clashes continued in 2020.

Following the outbreak of war, hundreds of thousands have lost their lives in Yemen, resulting in one of the worst humanitarian crises currently known in modern times. The war has left Yemen with significantly damaged infrastructures. For example, medical and water infrastructures have been hit during military strikes nearly 200 times since the intensification of the political conflict in Yemen. Data from the United States and European funded organizations as well as the Armed Conflict Location & Event Data Project (ACLED), estimate that “as of November 2020 over 130,000 Yemenis have been killed since 2015.”<sup>13</sup> Current estimates place the number of Yemenis in need of humanitarian assistance at around 22 million, with eight million at risk of famine and more than one million affected by the cholera outbreak.<sup>14</sup>

The United States saw the involvement of Al-Qaeda in the war as a new dimension to the security challenges in the region. First, it threatened America’s interest in the region. Second, it is also seen as a threat to the vested interest of the West in the region. Third, a threat against Saudi Arabia- United States main ally in the region is also considered as a direct threat to the U.S national security interest. Thus, the U.S became indirectly involved in Yemen through arms sales to Saudi Arabia, a development that raised concerns about more civilian casualties. Although the Houthis are of no direct threat to the U.S, their attacks on Saudi Arabia’s infrastructure and territories constituted a threat to the Saudis who are important allies of the U.S.<sup>15</sup> This led to the U.S support for Saudi Arabia. Human Rights Watch berated the U.S for its involvement in the war.

On February 4<sup>th</sup>, 2021, President Biden announced that the U.S will no longer be supporting offensive operations in Yemen.<sup>16</sup> This follows the U.S assessment of human rights abuses and humanitarian crisis from the war. The withdrawal of U.S support includes halting weapon sales and providing logistic support to Saudi Arabia.<sup>17</sup> . However, ending support of

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<sup>11</sup> Jonathan Marcus, “Why Saudi Arabia and Iran are bitter rivals.” *BBC*, September 16, 2019. <https://www.bbc.com/news/world-middle-east-42008809>

<sup>12</sup> Kali Robison, “Yemen’s Tragedy: War, Stalemate and Suffering. Last Updated, September 2, 2021. <https://www.cfr.org/background/yemen-crisis#chapter-title-0-5>

<sup>13</sup> Sharp, “*Yemen: Civil War and Regional Intervention*”

<sup>14</sup> Steven A. Cook and Philip H. Gordon, “War in Yemen.” Council on Foreign on Relations. Last Updated, April 2, 2021. [https://www.cfr.org/global-conflict-tracker/conflict/war-yemen\\_](https://www.cfr.org/global-conflict-tracker/conflict/war-yemen_)

<sup>15</sup> *Ibid.*

<sup>16</sup> Amanda Macias, This War Has to End- Biden Halts U.S Support for Offensive Military Operations in Yemen. *CNBC*, February 4, 2021. <https://www.cnb.com/2021/02/04/biden-will-announce-end-of-us-support-for-offensive-operations-in-yemen.html>.

<sup>17</sup> *Ibid.*

offensive operations will not end U.S defensive support to Saudi Arabia or the strategic fight against terrorism and its agents like Al-Qaeda in the region.

### **How the Civil War and COVID-19 has impacted Yemen's Health Sector**

For several years, the Yemen crisis has been considered one of the worst humanitarian crises in the world, and public health experts have warned that the coronavirus pandemic will harm Yemen's already weakened population.<sup>18</sup> Many healthcare experts fear that due to the civil war, the COVID-19 pandemic would have a devastating impact because approximately 50% of Yemen's population is already in dire need of healthcare services.<sup>19</sup> Specific health concerns that the country has been facing include high malnutrition rates and high infant and maternal mortality rates.<sup>20</sup> Additionally, Yemen suffers from inadequate sanitation, as many live in crowded homes with limited access to clean drinking water. The social stigmatization of COVID-19 also creates hindrances for an effective response to the pandemic in the country.<sup>21</sup> There is much fear of contracting COVID-19, and the stigma of contracting the virus and spreading it prevents people from coming to the hospital.<sup>22</sup> They instead stayed at home even when they needed medical treatments.<sup>23</sup>

As a result of the ongoing civil war, it is very challenging to establish efficient COVID-19 testing facilities. Yemen has six central public laboratories for testing COVID-19 in major cities such as Sana'a, Aden, Mukalla, Taiz, Hodeida, and Ibb.<sup>24</sup> Out of these six cities, only four can carry out testing for the virus under the supervision of the World Health Organization (WHO) due to a shortage of medical staff.<sup>25</sup> Many medical professionals involved in the testing are underpaid or not paid at all.<sup>26</sup> These four laboratories have provided medical staff with the technical training and standard procedures that are needed to administer the tests.<sup>27</sup> Therefore, this means that Yemen is wholly dependent on limited resources supported by the WHO, and the best-case scenario will be testing only a small number of highly suspected cases.<sup>28</sup> There is also a lack of access to personal protective equipment, like masks.<sup>29</sup> Lack of funding coupled with shortages in protective equipment has forced many healthcare professionals to leave their duty posts, a development that has forced many health centers to be shut down.<sup>30</sup>

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<sup>18</sup> Sharp, "Yemen: Civil War and Regional Intervention"

<sup>19</sup> Ali Ahmed Al-Waleed et al., "The first 2 months of the SARS-CoV-2 Epidemic in Yemen: Analysis of the Surveillance Data". *PLoS ONE*, 15 no. 10 (October 2020): 1-13. <https://doi.org/10.1371/journal.pone.0241260>.

<sup>20</sup> *Ibid.*, 2.

<sup>21</sup> *Ibid.*

<sup>22</sup> Amy Lieberman, COVID-19 is Spreading in Yemen. Why aren't Hospital Bed Full? *Devex*, July 23, 2020. <https://www.devex.com/news/COVID-19-is-spreading-in-yemen-why-aren-t-hospital-beds-full-97749>.

<sup>23</sup> *Ibid.*

<sup>24</sup> Ghulam Dhabaam, Walid A Al-Soneidar and Nazar N Al-Hebshi. "Challenges of Testing Covid in Conflict Zones: Yemen as an example." *Journal of Global Health*, 10 no. 1 (June 2020): 1-3. <https://web-b-ebshcohost-com.ezproxy.liberty.edu/ehost/pdfviewer/pdfviewer?vid=9&sid=81738868-d0b1-485e-afb2-0355af863d85%40pdc-v-sessmgr02>.

<sup>25</sup> *Ibid.*, 2.

<sup>26</sup> *Ibid.*

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*

<sup>29</sup> *Ibid.*

<sup>30</sup> *Ibid.*

There has also been a blockage of humanitarian aid in Yemen. Millions of Yemenis have been suffering due to the restriction of aid by Yemeni government officials and the Houthis.<sup>31</sup> For instance, between March 2015 and March 2021, the Mwatani Organization for Human Rights recorded at least 274 incidents of obstruction of aid by the Houthis.<sup>32</sup> These blockages have not only obstructed aid to those in need but have contributed significantly to the limited number of available laboratories for tackling the pandemic in Yemen.<sup>33</sup> The Human Rights Watch also reported that as of 2021, the Houthis have suppressed information about the dangers and impact of COVID-19 and they have undermined efforts by the international community to distribute vaccines to territories under their control.<sup>34</sup> They have actively spread disinformation about the virus and vaccines, making it difficult to effectively fight the pandemic.<sup>35</sup> Frequent power outages affect the performance of the laboratories and compromise results.<sup>36</sup> Moreover, large portions of roads in Yemen have been destroyed by bombs, which in turn limits the transportation of supplies to the laboratories.<sup>37</sup>

Limited resources have made testing for the virus difficult; nonetheless, there has been a high number of reported cases in the country. On April 10, 2020, Yemen confirmed its first COVID-19 case.<sup>38</sup> According to Looi, “Official figures put the number of confirmed cases at over 1600, with nearly 500 deaths—a mortality rate of 27%, which is one of the highest in the world and five times the global average.”<sup>39</sup> The WHO stated that the number of confirmed COVID-19 cases and deaths in Yemen for May 23, 2021, was 6653 and 1305 respectively.<sup>40</sup> The WHO also stated that its seroprevalence study suggested that the number of confirmed cases is much higher.<sup>41</sup> The number of confirmed cases and deaths from January 3 to June 28, 2021, are 6908 and 1360 respectively.<sup>42</sup> A 2020 study revealed a 57% hospitalization rate in Yemen’s southern and eastern parts within the first 2 months after the confirmation of COVID-19 cases.<sup>43</sup> This study further showed that 63% of deaths from COVID-19 were individuals younger than 60 years old.<sup>44</sup> The percentage of serious cases that needed hospital admission in Yemen was more than double the number of cases reported in many other countries, such as Iran whose approximated percentage was 20%.<sup>45</sup> Many COVID-19 cases were not connected to a clear mode of transmission and were classified as COVID-19 infections with no clear source of origin. As a

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<sup>31</sup> Ibid.

<sup>32</sup> Martin Gak, “Houthi Government: War won’t Stop Until Saudis Quit Yemen,” *Deutsche Welle*, April 15, 2021. <https://www.dw.com/en/houthi-government-war-wont-stop-until-saudis-quit-yemen/a-57208060>

<sup>33</sup> Ibid.

<sup>34</sup> Human Rights Watch, “Yemen: Houthis Risk Civilians’ Health in COVID-19. June 1, 2021. <https://www.hrw.org/news/2021/06/01/yemen-houthis-risk-civilians-health-covid-19#>

<sup>35</sup> Ibid.

<sup>36</sup> Ibid.

<sup>37</sup> Ibid.

<sup>38</sup> Mun-Keat Looi, “COVID-19: Deaths in Yemen are Five Times Global Average as Healthcare collapses”, *The Bmj*, July 27, 2020. doi: <https://doi.org/10.1136/bmj.m2997>.

<sup>39</sup> Ibid., 1.

<sup>40</sup> Sharmilah Devi, “Yemen Health System Has Collapsed Warns UN”. *The Lancet*, 397 no. 10289 (June 2021): 1. <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2821%2901197-1>

<sup>41</sup> Ibid, 1.

<sup>42</sup> “World Health Organization”, “Yemen”, Accessed June 28, 2021, <https://covid19.who.int/region/emro/country/ye>

<sup>43</sup> Ahmed Al-Waleed et al, “The first 2 months of the SARS-CoV-2 Epidemic in Yemen: Analysis of the Surveillance Data”, 7.

<sup>44</sup> Ibid, 8.

<sup>45</sup> Ibid.

In view of the foregoing this, medical professionals in Yemen could not determine the pattern by which the virus spread, thus making the pandemic difficult to contain.<sup>46</sup> As the pandemic began to peak, satellite imagery showed that across Aden governorate in Yemen there were approximately 1500 excess burial sites on July 6, 2020, and on September 19, 2020, the number rose to 2120 during the first wave of the pandemic before waning.<sup>47</sup> As of December 23, 2021, Yemen reported 10,105 infections and 1,981 COVID-19 related death since the pandemic took hold of the country.<sup>48</sup> However, these numbers may be grossly underreported because of the ongoing Civil War in the country. This matters because to effectively contain the pandemic requires sufficient amount of resources including humans, financial, as well as reliable timely data. Obviously, this has remained a challenge in Yemen because of its fragility. As a result, policies to contain the spread of the virus have been ineffective. The Civil War has polarized the country and has broken down supply chains. This means that relevant information, education on containment measures and access to vaccines is inequitable.

A recent study done by the London School of Hygiene and Tropical Medicine projected that up to 11 million people in Yemen could become infected, and deaths could be between 62,000 and 85,000 in an eventual worst-case scenario.<sup>49</sup> Moreover, the virus has harmed healthcare workers. As of 2020 at least 97 health workers, including infectious disease experts, medical directors, midwives, pharmacists, and other crucial medical professionals, have all reportedly lost their lives to the virus.<sup>50</sup> The impact of every healthcare provider's death has a lasting effect on the population, as these deaths prevent treatment from reaching communities in desperate need due to lack of access to health services.<sup>51</sup> The implication of this is that a broken healthcare system as the case with Yemen's is ill equipped to respond to the significant health and fiscal challenges posed by COVID 19 pandemic. The high level of fatality among health workers is equally attributable to the same failure - collapse of the healthcare system. This matters because the system may not be able to retain skilled hands neither would it be able to attract new hire since the system does not guarantee adequate safety for frontline responders. This could further exacerbate the crisis and lead to severe humanitarian challenge worse than what has already been witnessed.

With the civil war preventing a coherence of pandemic management, COVID-19 could result in long-term negative impacts on Yemen's healthcare system. A major long-term issue that will arise is the rebuilding and restructuring of medical care.<sup>52</sup> Rebuilding and restructuring the health sector of Yemen will not just require the funding of health facilities, but also the training of new doctors.<sup>53</sup> Also, there is a significant short-term health crisis created by the war. A section

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<sup>46</sup> Ibid.

<sup>47</sup> Koumn Besson ES et al, "Excess Mortality During the COVID-19 Pandemic: A Geospatial and Statistical Analysis in Aden Governorate, Yemen *BMJ Global Health*, 6 no 3 (March 2021): 1-10. <https://gh.bmj.com/content/bmjgh/6/3/e004564.full.pdf>

<sup>48</sup> Reuter COVID-19 Tracker, "Yemen." Updated, December 23, 2021. <https://graphics.reuters.com/world-coronavirus-tracker-and-maps/countries-and-territories/yemen/>

<sup>49</sup> Med Global, Project Hope, Center for Global Health at the University of Illinois, "A Tipping Point for Yemen Health System: The Impact of Covid on a Fragile State Report," 2020. Center for Global Health, Project Hope. July 2020 <https://reliefweb.int/sites/reliefweb.int/files/resources/A-Tipping-Point-for-Yemen%E2%80%99s-Health-System072020.pdf>.

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

<sup>52</sup> Ibid, 27.

<sup>53</sup> Ibid.

of the population without food has become malnourished with weaker immune systems, which makes them more susceptible to COVID-19 complications. The COVID-19 situation in Yemen could also redirect limited resources away from crucial healthcare responses to other deadly diseases like cholera and dengue.<sup>54</sup> Yemen's healthcare system is moving closer to the brink of collapse, and the impact on the Yemeni healthcare system has the potential to be catastrophic.

### Impact of the Pandemic on Yemen's Economy

COVID-19 has not only impacted Yemen's healthcare system, but its economy as well. Yemen is among the poorest and least-developed countries in the world. It is estimated that around 80% of Yemen's population is below the poverty line.<sup>55</sup> Before the civil war started, 90% of its food and most of its medicinal and fuel necessities were imported.<sup>56</sup> Yemen's unemployment rate was high and stood at 45% among youth.<sup>57</sup> Before the civil war and the COVID-19 pandemic, Yemen depended heavily on the exportation of oil and gas, with these industries contributing almost 50% of the country's foreign reserves and 50-60% of its public budget financing.<sup>58</sup> The loss of processed natural gas exports due to civil war caused a public finance and liquidity crisis, and in 2016, this left most of Yemen's 1.25 million public sector employees and their 7 million dependents without a regular income.<sup>59</sup>

Yemen's economy felt the impact of COVID-19 before any cases were confirmed due to business closures in other countries as those nations sought to mitigate the pandemic. The flow of remittances from Yemenis abroad contributes about 12.6% to the country's GDP, and the COVID-19's disruption of the global economy caused a 95% fall in the number of remittances in at least one exchange office in Northern Yemen.<sup>60</sup> The World Bank in 2020 estimated that there was a 19.6% decline in the inflow of remittances to Yemen.<sup>61</sup> Hence, remittances from abroad went down from \$58 billion in 2019 to \$47 billion in 2020. Yemen also took a fair share of the worldwide disruptions and distortions of labor market demand because of the lockdown and stay-at-home measures by various governments. Due to the reduction in remittances, poorer Yemeni households became the most affected as they saw a 20% reduction in their annual income.<sup>62</sup>

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<sup>54</sup> MedGlobal, Project Hope, Center for Global Health, "A Tipping Point for Yemen Health System: The Impact of Covid on a Fragile State Report 2020." 27

<sup>55</sup> Mugaahed Abdu Kaid Saleh and Manjunath K. Rajappa, "Fighting COVID-19 in Yemen: The Role of Public Administration and Readiness of Healthcare system." *Mukt Shabd Journal*, 9 no. 6 (June 2020): 1459-1472. [https://www.researchgate.net/profile/Mugaahed-Abdu-Kaid-Saleh/publication/342335589\\_Fighting\\_COVID-19\\_in\\_Yemen\\_The\\_role\\_of\\_Public\\_Administration\\_and\\_Readiness\\_of\\_Healthcare\\_system/links/5eee2d7a92851ce9e7f4a8b1/Fighting-COVID-19-in-Yemen-The-role-of-Public-Administration-and-Readiness-of-Healthcare-system.pdf](https://www.researchgate.net/profile/Mugaahed-Abdu-Kaid-Saleh/publication/342335589_Fighting_COVID-19_in_Yemen_The_role_of_Public_Administration_and_Readiness_of_Healthcare_system/links/5eee2d7a92851ce9e7f4a8b1/Fighting-COVID-19-in-Yemen-The-role-of-Public-Administration-and-Readiness-of-Healthcare-system.pdf).

<sup>56</sup> Sana'a Economic Unit, "Yemen Accelerating Economic Woes Amid During the COVID-19 Pandemic." Sana'a Center, October 2020. [https://sanaacenter.org/files/Rethinking\\_Yemens\\_Economy\\_No7\\_En.pdf](https://sanaacenter.org/files/Rethinking_Yemens_Economy_No7_En.pdf).

<sup>57</sup> *Ibid.*, 5.

<sup>58</sup> *Ibid.*

<sup>59</sup> *Ibid.*

<sup>60</sup> Mugaahed Abdu Kaid Saleh, and Manjunath, K. Rajappa, "Small and Medium Enterprises in Yemen: Navigating through Additional Obstacles During COVID-19", *11th International Conference on Shifting Paradigm in Business, Economy and Society: Vision 2050*, Pacific University. September 2020.

<sup>61</sup> Sana'a Economic Unit, "Yemen Accelerating Economic Woes Amid During the COVID-19 Pandemic,"

<sup>62</sup> Dalia Elsabbagh, Sikandra Kurdi and Manfred Wiebelt. "Model: Impact of Falling Remittances Amid COVID-19 on Yemen War Torn Economy." *IFPRI* (blog). *International Food Policy Research Institute*, March 4, 2021. <https://www.ifpri.org/blog/model-impact-falling-remittances-amid-COVID-19-yemens-war-torn-economy>.

The global lockdown mandates resulted in significant negative effects for the nation of Yemen. For example, the slowdown in the inflow of imported goods led to price inflation.<sup>63</sup> In 2020, the International Monetary Fund (IMF) stated that due to the effects of COVID-19, oil-exporting countries in the Middle East and North Africa (MENA) region will see a \$224 billion shortfall in revenue.<sup>64</sup> Yemen is a country that is heavily dependent on oil exports, which make up 70-80% of the government revenue.<sup>65</sup> In 2020, the Yemeni government was expected to export 30 million barrels of oil but due to a drastic fall in oil prices and the economic lockdowns as a result of the pandemic, the government could not reach its goal.<sup>66</sup> This situation created a revenue shortfall and widened the financing gap, limiting government efforts to support small business enterprises and the economy.<sup>67</sup>

The pandemic has, without a doubt, exacerbated the fragility of Yemen. Because of the nation's vulnerability, many believe that the pandemic will only worsen the humanitarian crisis. Given its dependency on oil exports for revenue, government revenue will be limited, meaning that a great economic downturn in Yemen is inevitable.

### Recommendations for Yemen

#### Strengthen Yemen's Electronic Integrated Disease Early Warning System (eIDEWS)

Various COVID-19 responses have been implemented in Yemen, one of which is an Electronic Integrated Disease Early Warning System (eIDEWS). The eIDEWS is a health facility-based surveillance system and it covers about 37% of Yemen's health resources, consisting of a network of nearly 200 health facilities spanning the whole country while collecting data on as many as 28 diseases.<sup>68</sup> The idea of a national surveillance system was conceived in 2013 to help identify and prioritize infectious diseases; however, the system collapsed as a result of the civil war and its functions were integrated into eIDEWS to ensure effective data collection, analysis, and public health response.<sup>69</sup> Currently, the system collects data from sentinel sites by using mobile cellular software and sends the data to districts, governorates, and central surveillance offices.<sup>70</sup> It allows health workers to give early reports on

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<sup>63</sup> Saleh and Rajappa, "Small and Medium Enterprises in Yemen: Navigating through additional obstacles during COVID-19," 9,

<sup>64</sup> Nader Itayim, "Covid-19 to Deal \$224bn Blow to Mena Oil Exporters: IMF," Argus, October 19, 2020, <https://www.argusmedia.com/en/news/2151443-covid19-to-deal-224bn-blow-to-mena-oil-exporters-imf>.

<sup>65</sup> Saleh and Rajappa, "Small and Medium Enterprises in Yemen: Navigating through additional obstacles during COVID-19," 9.

<sup>66</sup> Ibid.

<sup>67</sup> Ibid.

<sup>68</sup> World Health Organization, "Strengthening Yemen's Disease Early Warning System During COVID-19 pandemic," Accessed March 23, 2021. <http://www.emro.who.int/pandemic-epidemic-diseases/news/strengthening-yemens-disease-early-warning-system-during-the-COVID-19-pandemic.html#:~:text=eIDEWS%20is%20a%20health%20facility,outbreaks%20of%20priority%20infectious%20diseases>.

<sup>69</sup> Ibid

<sup>70</sup> Ibid

threats to public health.<sup>71</sup> In 2019 it was revamped by adding a series of new and enhanced reporting and automated output characteristics.<sup>72</sup>

One of the major challenges with the surveillance system is the timeliness of alerts, as a study by Dureab found delays in the timely reporting of data.<sup>73</sup> In this study, although a majority of informants recognized the eIDEWS function of early detection of disease, they also acknowledged that there was a delay in timely reporting.<sup>74</sup> In this study, eight participants stated that the eIDEWS verification process of alerts was too slow when compared to required actions for immediate alerts.<sup>75</sup> This is problematic as it slows down the speed of response to public health threats such as COVID-19.

Due to the global pandemic, the eIDEWS has undergone enormous strain and cannot properly respond to the pandemic. The WHO is supporting Yemen through the Early Warning Alert Response Network (EWARN).<sup>76</sup> EWARN is an early disease warning system that temporarily detects diseases during a humanitarian crisis.<sup>77</sup> Through the EWARN project, the WHO must prioritize ensuring rapid response to alerts of Yemen eIDEWS. This will help the country respond well to COVID-19. As stated earlier, Yemen has no proper healthcare system in place to properly absorb the impact of COVID-19. The Early Warning Alert Response Network can fill this gap through collection of data, data management and analysis of the impact of the pandemic. As a war-torn country with limited access to healthcare services, the EWARN is a much-needed tool that could help the WHO officials and public health officials to properly prepare appropriate response to the humanitarian crisis.

#### Increase the Preparedness Level for COVID-19

The level of preparedness for COVID-19 in Yemen is low. Lack of adaptive behaviors such as social distancing, wearing masks, and handwashing by the population has harmed Yemen's level of preparedness toward COVID-19.<sup>78</sup> Due to the ongoing civil war and lack of medical staff, the risk communication system in Yemen is currently not effective in countering the pandemic. However, there has been an effective coordination mechanism between humanitarian partners through the national Health Cluster, a WHO program for organizing humanitarian health responses. Humanitarian partners under the Health Cluster program are currently preparing for a second wave and engaging with excluded/vulnerable groups to ensure

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<sup>71</sup> Mona Mayad, Reema Alysufi, Ali Assabri and Yousef Kahder. "An Electronic Disease Early Warning System in Sana'a Governorate, Yemen: Evaluation Study." *JMIR public health and surveillance*, 5 no. 4 (November 2019): 1-7. <https://publichealth.jmir.org/2019/4/e14295/PDF>.

<sup>72</sup> World Health Organization, "Strengthening Yemen's Disease Early Warning System During COVID-19 pandemic."

<sup>73</sup> Fekri Dureab et al., "Assessment of electronic Disease Early Warning System for Improved Disease Surveillance and Outbreak Response in Yemen". *BMC Public Health* 20, no. 1422 (September 2020). <https://doi.org/10.1186/s12889-020-09460-4>.

<sup>74</sup> *Ibid.*, 6.

<sup>75</sup> *Ibid.*

<sup>76</sup> World Health Organization, "Strengthening Yemen's Disease Early Warning System During COVID-19 pandemic."

<sup>77</sup> Center for Disease and Control, "Early Warning Alerts and Respond Network Put the Brakes on Deadly Diseases," August 12, 2020, <https://www.cdc.gov/globalhealth/healthprotection/fieldupdates/fall-2016/ewarn.html>.

<sup>78</sup> United Nations Office for the Coordination of Humanitarian Affairs Services, "Yemen: COVID-19 Preparedness and Monthly Report," (January 2021), February 23, 2021. <https://reliefweb.int/report/yemen/yemen-covid-19-preparedness-and-response-monthly-report-january-2021>.

that they are supported in their health facilities as they respond to COVID-19.<sup>79</sup> The WHO will need to ensure that it provides the necessary supplies to help increase the level of preparedness in Yemen, and health partners should prioritize encouraging behavioral change such as social distancing in the community. Moreover, these partners in 2021 will begin to promote COVID-19 vaccination by drawing on the global COVAX initiative.<sup>80</sup> COVAX is a program that was launched by the WHO, the European Union, and Gavi Vaccine Alliance in response to the global pandemic.<sup>81</sup> Making sure that vulnerable people in Yemen get vaccinated will help increase the country's level of preparedness for COVID-19. Since 2004, France has directly contributed to the Gavi Vaccination Alliance.<sup>82</sup> During the 2020 Global Vaccine Summit, France announced a new €350 million contribution to Gavi.<sup>83</sup> Out of the €350 million, €250 million was distributed to Gavi Vaccine Alliance core programs and €100 million was allocated to the COVAX initiative.<sup>84</sup>

As of June 27, 2021, 268,753 vaccine doses have been distributed in Yemen.<sup>85</sup> To keep these numbers up, the Yemeni government and other international organizations need to create a safe model for vaccination rollout.<sup>86</sup> To ensure the effective coverage of the vaccination program, a strategy based on logistical consideration which segments and prioritizes the risk group should be pursued to enhance efficiency and strengthen preparedness in the management of the process.<sup>87</sup>

The implementation of special teams via WHO and the Yemeni government to coordinate matters related to COVID-19 across many disciplines would be beneficial in keeping the nation updated on COVID-19 protocols.<sup>88</sup> Another way that the administration of Yemen can improve its level of readiness to contain the pandemic and reduce more casualties is by making sure that there is a strong collaboration with private healthcare providers. Hospital administrators will also need to take the necessary steps that will ensure that medical staff are protected from the virus.<sup>89</sup>

### Adoption of Human Rights-Based Response for COVID-19

Although government agencies should take preventive measures against COVID-19 in various parts of Yemen, such measures and responses must respect basic human rights and freedom. Such measures must be without discrimination. In times of conflicts and global pandemics, citizens' rights may be restricted due to public concerns. However, restrictions on

<sup>79</sup> UNOCHA, "Yemen: COVID-19 Preparedness and Monthly Report," (January 2021).

<sup>80</sup> UNOCHA, "Urgent Measures Needed to Protect Civilians From COVID-19," April 28, 2020. <https://reliefweb.int/report/yemen/yemen-urgent-measures-needed-protect-civilians-COVID-19>

<sup>81</sup> Seth Berkely, "Covax Explained." Gavi. September 3, 2020. <https://www.gavi.org/vaccineswork/covax-explained>.

<sup>82</sup> Gavi: The Vaccine Alliance, "France," Accessed April 29, 2021, <https://www.gavi.org/investing-gavi/funding/donor-profiles/france>.

<sup>83</sup> Ibid.

<sup>84</sup> Ibid.

<sup>85</sup> "World Health Organization", "Yemen", Accessed June 28, 2021, <https://covid19.who.int/region/emro/country/ye>

<sup>86</sup> Abdullah Nasser and Fathiah Zakham, "A Strategy For SARS-CoV-2 Vaccination in Yemen". *The Lancet*, 397 no. 10291 (June 2021): 1. [https://doi.org/10.1016/S0140-6736\(21\)01016-3](https://doi.org/10.1016/S0140-6736(21)01016-3)

<sup>87</sup> Ibid, 1.

<sup>88</sup> Saleh and Rajappa, "Fighting COVID-19 in Yemen: The Role of Public Administration and Readiness of Healthcare system," 1468.

<sup>89</sup> MedGlobal, Project Hope, Center for Global Health "A Tipping Point for Yemen Health System: The Impact of Covid on a Fragile State Report 2020," 28.

citizens' rights can also lead to authorities abusing their power. Some human rights concerns during this humanitarian crisis are limits on freedom of expression, inadequate protection for health workers, stigmatization and discrimination, and lack of protection of civil and community societies.<sup>90</sup> Government officials in Yemen should make sure that everyone has access to treatment and is not denied because of their inability to pay or because of their background. The international community must stand up to put an end to the human carnage in Yemen.

Additionally, the Yemeni government should mobilize and deploy military personnel to provide escort to humanitarian organizations on ground in Yemen to distribute humanitarian aids such as vaccines and other essentials to the population especially the most vulnerable. Pakistan used military personnel as escort for vaccination teams during conflict.<sup>91</sup> Yemen can do the same with support from allies. This strategy can help ensure better access to the vaccines by the population and ensure equal access to vaccines without discrimination. Any emergency measures taken by the government must be necessary and proper so that fundamental human rights are not denied. Humanitarian agencies stated that although the Yemeni government did not obstruct them as much as the Houthis did, the government still interfered and significantly delayed their work.<sup>92</sup> The US blocked aid to Yemen because humanitarian assistance was taxed in areas that were controlled by the Houthis.<sup>93</sup> The crisis in Yemen has revealed harsh truths that the international community has to accept. One of them is that the Houthis are strongly opposed to the West and cannot be wished away. A way the U.S can engage in a direct dialogue with the Houthis is by a new balanced U.N Security Council Resolution, condemning the blockade and a call for an inclusive government.<sup>94</sup> Due to the intricate nature of the Civil War in Yemen a political solution to the chaos is not likely in the immediate future. A partition may be the best path to peace and stability in Yemen as this will also help in the management of the pandemic. There has been a historical precedent for two Yemen. Before its unification in 1990 there was a Northern and Southern Yemen.<sup>95</sup> Northern Yemen once existed as a separate theocratic Zaidi rule and then in the second half of the 21<sup>st</sup> century it had an authoritarian Arab nationalist government.<sup>96</sup> The south on the other hand was a loose confederation of semi-independent emirates under the British rule.<sup>97</sup> Partition may be the best solution that could ensure stability in the region and in turn help to effectively contain the impact of the pandemic as all the parties involved would now have a voice in the management of affairs.

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<sup>90</sup> Human Rights Watch, "Human Rights Dimensions of COVID-19 Response," March 19, 2020, [https://www.hrw.org/news/2020/03/19/human-rights-dimensions-covid-19-response#\\_Toc35446578](https://www.hrw.org/news/2020/03/19/human-rights-dimensions-covid-19-response#_Toc35446578).

<sup>91</sup> Chimeremma Nnadi et al, "Approaches to Vaccination Among Population in Areas of Conflict," *Journal of Infectious Disease*, 216, no. 1 (July 2017): 368-372. <https://doi.org/10.1093/infdis/jix175>

<sup>92</sup> Human Rights Watch, "Human Rights Dimensions of COVID-19 Response."

<sup>93</sup> Bruce Riedel, "Saudi Arabia Wants Out of Yemen," Brookings, April 13, 2020, <https://www.brookings.edu/blog/order-from-chaos/2020/04/13/saudi-arabia-wants-out-of-yemen/>.

<sup>94</sup> Bruce Riedel, "Getting Yemen's Houthis to say "yes" on a ceasefire," Brookings, March 1, 2021, <https://www.brookings.edu/blog/order-from-chaos/2021/03/01/getting-yemens-houthis-to-yes-on-a-ceasefire/>

<sup>95</sup> Bruce Riedel, "Getting Yemen's Houthis to say "yes" on a ceasefire"

<sup>96</sup> Fraz Naqvi, "Partition: The Only Solution to End Yemen's Crisis," *The London School of Economics and Political Science* (blog), November 4<sup>th</sup>, 2019. <https://blogs.lse.ac.uk/mec/2019/11/04/partition-the-only-solution-to-end-yemens-crisis/>

<sup>97</sup> Bruce Riedel, "Getting Yemen's Houthis to say "yes" on a ceasefire"

## Full Funding of the Yemen Humanitarian Response Plan by Donor Governments

A humanitarian aid funding gap exists between the UN, NGO-led programs, and health programs.<sup>98</sup> For example, in June 2020, international governments at a donor conference pledged to contribute only \$1.35 billion to Yemen's humanitarian aid program.<sup>99</sup> Unfortunately, this pledge fell more than \$1 billion short of the \$2.41 billion targets set by the UN, and it raised only half of what was raised in 2019.<sup>100</sup> Many aid organizations in Yemen have yet to see the pledge materialize in the form of medical resources or other necessary humanitarian materials.<sup>101</sup> As the pandemic began to affect the global economy, many nations around the world decided to concentrate on situations within their borders.<sup>102</sup> Thus, international governments have only contributed \$1.43 billion of the \$3.38 billion requested for the 2020 Yemen Humanitarian Response Plan, meaning that less than 60% of the requirement for the Yemen Humanitarian Response Plan has been met.<sup>103</sup> To help Yemen contain the impact of the pandemic, donor governments will need to increase the level of funding and meet their commitments to enable help reach those who desperately require humanitarian aid.<sup>104</sup> If donor governments do not follow through on their pledges, the humanitarian crisis in Yemen could become much worse than anticipated.<sup>105</sup> Donor governments should also prioritize funding NGOs in Yemen that support humanitarian and health workers, as a quicker channel of reaching the most vulnerable.<sup>106</sup>

## Reform UN Arms Trade Treaty

The UN needs to reform the UN Arms Trade Treaty (ATT) if it hopes to bring an end to the humanitarian crisis in Yemen. For more than five years, the UN ATT has been enforced and it imposes strict rules that regulate the sales and transfer of international arms.<sup>107</sup> The treaty was designed to stop deadly weapons from getting into the hands of people who may use them to violate human rights laws, which include genocide, war crimes, and crimes against humanity.<sup>108</sup> Both parties in the war have, at several points in time, violated the arms treaty.<sup>109</sup> Despite existing sanctions on the Houthis by the UN, the Houthis are still being supplied with weapons

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<sup>98</sup> MedGlobal, Project Hope, Center for Global Health, "A Tipping Point for Yemen Health System: The Impact of Covid on a Fragile State Report 2020," 28.

<sup>99</sup> Hannah Cooper, Colm Byrne, Catherine De Bock, and Scott Paul, "Funding the Humanitarian Response in Yemen." Oxfam International GB. October 2020. <https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621083/bn-funding-humanitarian-response-yemen-271020-en.pdf>.

<sup>100</sup> *Ibid.*, 3.

<sup>101</sup> *Ibid.* 3

<sup>102</sup> *Ibid.*, 8.

<sup>103</sup> *Ibid.*

<sup>104</sup> MedGlobal, Project Hope, Center for Global Health, "A Tipping Point for Yemen Health System: The Impact of Covid on a Fragile State Report 2020," 30.

<sup>105</sup> *Ibid.*

<sup>106</sup> *Ibid.*

<sup>107</sup> Amnesty International, "Arms Control," Accessed April 27, 2021, <https://www.amnesty.org/en/what-we-do/arms-control/>.

<sup>108</sup> *Ibid.*

<sup>109</sup> Simone Wisotzki, "Violating the Arms Trade Treaty: Arms Exports to Saudi Arabia and the Humanitarian Crisis in Yemen," Peace Research Institute Frankfurt, January 1, 2018, <https://www.jstor.org/stable/pdf/resrep14282.pdf?refreqid=excelsior%3A3f42562bb5c0f857579a2d848eb1420f>.

by Iran.<sup>110</sup> The Saudi coalition, on the other hand, is being equipped with weapons by Western states such as Germany, Switzerland, and Sweden.<sup>111</sup> Additionally, the UK and the US are major allies of Saudi Arabia, and in 2018, they contributed \$237 million and \$87 million respectively in arms sales to the Saudi Coalition.<sup>112</sup> Most Western countries including the UK and U.S who once advocated for the ATT no longer abide by it thereby rendering it ineffective. Andrew Smith, a spokesman for Campaign Against Arms stated that ATT has always had problems.<sup>113</sup> One major issue with the UN ATT is that its text appears to be recommendatory, rather than obligatory,<sup>114</sup> and it also does not address the transfer of arms to non-state actors.<sup>115</sup> The treaty is too weak to hold members accountable and there is a need for a change and new approach toward regulating the flow and transfer of arms. The new approach will be a major reform of the existing ATT system. This will help reduce the humanitarian crisis that Yemen is experiencing and put the country in a better position to fight the global pandemic.

### Conclusion

Yemen is facing an unprecedented number of issues, including situations many have called the worst humanitarian crisis of our time. The ongoing civil war brought Yemen to its knees and the global pandemic will only worsen its economic, political, and health concerns. Due to the ongoing humanitarian crisis, more than half of the population of Yemen greatly depends on external humanitarian aid. Thus, the UN, US, and other international government donors must commit to the Humanitarian Response Plan for Yemen so that the nation can combat the impacts of the civil war and COVID-19. Regarding the COVID-19 response, health workers in Yemen should be supplied protective equipment to ensure that they can deliver treatment without concern for their health. The presented solutions will be crucial in helping Yemen handle both the civil war and COVID-19 more efficiently. A failure of the international community to properly respond to this situation will only create more global problems now and in the future.

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<sup>110</sup> Ibid., 2.

<sup>111</sup> Afrah Nasar, "The Problem with Humanitarian Assistance to Yemen," Atlantic Council, May 1, 2018, <https://www.atlanticcouncil.org/blogs/menasource/the-problem-with-humanitarian-assistance-in-yemen/>.

<sup>112</sup> Ibid.

<sup>113</sup> Ben Knight, "UN Arms Trade Treaty Too Weak to Make a Difference," Deutsche Welle, November 9, 2017, <https://www.dw.com/en/uns-arms-trade-treaty-too-weak-to-make-a-difference/a-40452550>.

<sup>114</sup> Joshua D. Sorensen, "United Nations Arms Trade Treaty: Russia's Justifications for Abstention and the Treaty's Effectiveness in Application," Brigham Young University International Law and Management review, 11 no. 2, (August 2015): 238-257, <https://digitalcommons.law.byu.edu/cgi/viewcontent.cgi?article=1136&context=ilmr>.

<sup>115</sup> Ibid., 247.

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