Who Stinks? Analysis and Response to Cholera in Syrian Refugee Settings in Lebanon

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Introduction

For decades, civil strife and insecurity in Lebanon have caused large portions of Lebanese society to flee the country. Between 1975 and 1990, close to 900,000 fled Lebanon as a result of the Lebanese Civil War.[1] As of 2016, more than 14 million people of Lebanese descent live outside Lebanon, compared to less than 4.5 million inside the country.[2] With the outbreak of the Syrian Civil War in 2012 causing the number of asylum seekers in Lebanon to rise by nearly 30 percent, Lebanon now hosts some 1.5 million refugees, constituting around 40 percent of the total population.[3] Rather than a refugee-producing state, Lebanon has become a refuge for Iraqis, Palestinians, and Syrians, and considered by some a "refugee holding pen."[4]

Lebanon's recent and dramatic demographic shift poses new challenges for its already teetering health system. Chief among these is concern over cholera outbreaks in refugee populations. Recently, international health actors, such as the World Health Organization (WHO) and Center for Disease Control (CDC), have issued warning of cholera outbreaks.[5] In November 2015, a large outbreak of cholera in Iraq impacted several Syrian refugee populations in urban areas similar to those in Lebanon. This outbreak had close to 3,000 confirmed cases.[6] As the Syrian conflict remains protracted and refugees continue to flood into Lebanon, the likelihood of a similar outbreak of cholera in Lebanon continues to rise.

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1 "Middle East: Lebanon" CIA World Fact Book, last modified February 2016. Retrieved March 3, 2016. https://www.cia.gov/library/publications/the-world-factbook/geos/le.html

2 "The Lebanese Public Country Information" Government of the United Kingdom National Archives 3 April, 2007. Retried March 3, 2016. http://collections.europarchive.org/tna/20080205132101/http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029394365&a=KCountryProfile&aid=1018721190906

3 For the purposes of this study, I will focus on the condition of Syrian refugees in Lebanon, as opposed to Iraqi refugees which occupy a very different socio-economic strata in Lebanese society, or Palestinian refugees, which are registered by a separate UN agency, UNRWA.

4 Faur, Ali أربعة مليون لأجئ: الأنفجار السكاني: هل تبقي سوريا؟ هل ينجوا لبنان؟ See Section 5: "Perceptions of Lebanon as a Refugee State" Beirut, Lebanon. Dar Al-Mu'ssah Al-Geographia Publishing (2015).

5 Buchanan, Else "Lebanon: Doctors Warn of Spread of cholera in Refugee Camps as Rubbish Crisis Intensifies" *International Business Times,* September 15, 2015. Retrieved March 3, 2016.www.ibtimes.co.uk/lebanon-doctors-warn-spread-cholera-refugee-camps-rubbish-crisis-intensifies-1519262

6 "cholera – Iraq: Disease Outbreak News" WHO last modified November 26, 2015. Retrieved March 3, 2016 http://www.who.int/csr/don/26-november-2015-iraq-cholera/en/

Before further discussion of cholera in Syrian refugee camps in Lebanon, however, the disease itself must be considered. Cholera, or *Vibrio cholera,* is an infectious disease that when contracted in the small intestine causes a variety of effects, ranging from mild fever to severe muscle cramps, vomiting, and death.[7] Most cases are spread through the mixing of potable water or food with human feces, although other means of transmission occur, such as through undercooked vegetables. Cholera's average morbidity is low—less than 1 percent—and most often results in 2-3 days of large amounts of watery diarrhea and dehydration.[8]

Research on cholera prevention and treatment is as old as modern epidemiology itself, dating back to John Snow's famous study on the Broad Street pump during cholera epidemics in London in the mid-19th century. Since Snow's time, significant advances have been made in the study of cholera and epidemiology as a whole. In the late 19th century, scientists developed the first cholera vaccine in laboratory competitions between the US and European scientists.[9] There are currently two types of oral vaccines and one injectable cholera immunization vaccines, although the injectable vaccine is obsolete. Oral vaccines have been implemented worldwide since the 1990s, and range from $0.1 to $4 per dose, depending on supply and in-country factors. Such vaccinations provide 52-62 percent protection for two years, depending on the specific type of oral vaccination.[10] Crucially, oral vaccination does not guarantee immunization within the first six weeks and is largely ineffective during that period.[11] This six-week time frame has sparked debate within the international health community over its cost-effectiveness, compared with the rate of return of traditional forms of prevention, such as oral re-

7 "Information for Public Health and Medical Professionals: Cholera" Centers for Disease Control and Prevention (CDC), January 6, 2015. Retrieved April 2016. http://www.cdc.gov/cholera/healthprofessionals.html

8 Ibid.

9 Plotkin, Stantley. "History of Vaccination" *Proceedings of the National Academy of Science of the United States of America* (111)(34). See "Inactivation"

10 "Martin, Lopez et al. "Post-licensure deployment of oral cholera vaccines: A systematic review" *Bulletin of World Health Organization* December 2014, (92)(12): pp. 881-193.

11 Government of Australia, Department of Health "Cholera Immunization" *The Australian Immunization Hand Book 10th Edition,* Last updated April 8, 2016. Retrieved April 8, 2016. http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4~handbook10-4-1

hydration therapy and mass consumption of electrolytes.[12]

Unlike diseases with complex biological components like Ebola, HIV/AIDS, or cancer, cholera treatment and prevention is simple: drink clean water. Despite this straightforward treatment, some 3-5 million people still contract cholera each year, causing an estimated 58,000 to 130,000 deaths.[13] This is due to external, socio-economic considerations of cholera, rather than the disease itself. Because most deaths occur due to dehydration, areas lacking access to clean water can increase morbidity of cholera by up to 400 percent.[14] While cholera exists worldwide, cholera outbreaks are especially dangerous in vulnerable populations and areas with poor healthcare infrastructure.

As such, overcrowded refugee settings in Lebanon are ideal locations for a cholera outbreak. The escalated displacement of Syrians has led to dramatic urbanization and overcrowding in cities such as Trabaluos, Zahl, and Beirut. Between 2014 and 2015, the overall Lebanese population density rose by 30 percent. This rapid increase has significantly escalated waste generation, pollution in rivers, and posed significant problems in water and sanitation in cities. Moreover, rapid urbanization has pushed refugees in Lebanon to seek less secure shelter outside cities.[15] In 2015, some 25,000 irregular settlements were constructed by refugees, which now account for 18 percent of refugees living in Lebanon. These settlements lack basic sanitation and medical services and are vulnerable to adverse weather conditions.[16]

Such overcrowding and inadequate shelter has been a key factor in cholera outbreaks in refugee settings in the past. In Dadaab, Kenya, an enormous Somali refugee camp legally permitted from expanding in size because of restriction from the Government of Kenya, similar rates of overcrowding and shared communal living spaces motivated large outbreaks of cholera. In 2011 alone, Dadaab

12 "Cholera Vaccines: WHO Position Paper" *Weekly Epidemiological Record* March 26, 2010 (13)(85): pp 117-128.
13 Ibid.
14 Ibid.
15 UNHCR, "Regional Response and Resiliency Plan for Lebanon" *UNHCR Press,* Original Published May 6 2015: p. 48.
16 Ibid. p. 115

received over 160,000 refugees, leading to a large outbreak of cholera later that year, and again in 2012.[17] While Syrian refugees and Palestinian refugees in Syria (PRS) in Lebanon benefit from better shelter than those living in Dadaab (48 percent living in adequate dwellings compared to 6 percent in Dadaab), Lebanon has settled over 450,000 refugees within the last year, in mostly poor, vulnerable urban areas.[18] This large influx of refugees into overcrowded, poorly organized areas similar to Dadaab significantly heightens the risk for an outbreak of cholera in refugee settings in Lebanon.

Another factor central to a potential outbreak of cholera in Lebanese refugee settings is the poor state of Lebanon's sewage system. The Lebanese Ministry of Water and Energy is still recovering from the scarring effects of the country's fifteen-year civil war and a brutal war with Israel. During these conflicts, Lebanese society developed ad-hoc regional water and sewage systems contracted with private, mostly French, companies.[19] This complex, privatized system has remained and hinders the current government's ability to effectively monitor water and ensure health codes. This disorganization has also made it more difficult for refugees to buy access to water because of its uncontrolled costs and the increasingly predatory relationship between refugees and Lebanese landlords.[20] [21]

In 2010, while 78 percent of those living in Lebanon enjoyed access to public water, 25 percent of all water used and 70 percent of ground water sources were designated as “illegal,” by the Government of Lebanon, meaning they did not meet minimal building codes and pose serious health risks.[22] Lebanon's poor public waste removal system was also never fully rehabilitated after the Civil War and relies heavily on private contracts and regional relationships. Currently 29 percent of waste in

17 Guyer, Sarah, “cholera and Hepatitus E in the Dadaab Refugee Complex ,” MSF, Somalia December 28 2012, p 1.
18 “2015 UNHCR Country Operations Profile – Lebanon” 2015, UNHCR Retrieved March 5 2016. http://www.unhcr.org/pages/49e486676.html
19 “IPEMED” Institut De Prospective Economic Du Monde Méditerranéen, “Water and Sanitation Services in Cities Bordering the Mediterranean Sea: Lebanon,” January 30, 2007. p. 47.
20 UNHCR “Refugees from Lebanon: Syria” March 2015, retrieved March 5 2016.
21 UNHCR “UN Habitat, Housing and Land Property Issues in Lebanon: Implications of the Syrian Refugee Crises,” August 8 2014. p. 21.
22 World Bank, “Republic of Lebanon Water Sector: Public Expenditure Review,” Report No. 52024-LB, May 17 2010. p. 14.

Lebanon is openly dumped, whereas a healthy level is considered to be less than 3 percent.[23] [24] Lebanese waste removal services dump 48 percent of *total* public waste into only three landfills. Last summer, only two of such sites were operational.[25]

Over the last year, the Lebanese Ministry of Water and Energy's and the Ministry of Environment's consistent inability to effectively ensure clean water and waste removal has posed considerable risk to residents in Lebanon. During the summer of 2015, these health risks were brought to light by a series of national protests after garbage collectors went on strike for more than a month, dubbed the "You Stink!" protests.[26] While "You Stink!" failed to bring change to the waste removal system, it did succeed in bringing international attention to the Government of Lebanon's indifference towards water supply and sanitation, as well as its grim future if it does not take initiative.

This lack of health infrastructure poses a general health risk to Lebanese citizens and a heightened risk to Syrian refugees who live mostly in urban environments. In the last three years, the Government of Lebanon has increased allocations to waste services by 40 percent due to the influx of refugees in the country. For many refugees in Lebanon, these services, in addition to humanitarian aid relating to water, hygiene, and sanitation (WASH), are the only ways to sanitize waste and water.[27] If an outbreak of cholera were to occur in refugee settings and the Government of Lebanon is (as presently) unfit to support the necessary health infrastructure, the results could be disastrous. In such a case, the health of nearly 1 million refugees who rely on the government's services would be solely at the discretion of UNHCR and the international community. This could present a situation similar to the cholera outbreaks in Somali refugee camps in Kenya in 2011 and 2012 and after the 2010 earthquake in

23 "Waste in Lebanon" The Green MED Initiative ("GMI"), 2013. Retrieved March 3, 2016. http://gmiproject.eu/?page_id=928

24 "Municipal Solid Waste" United States Environmental Protection Agency, last modified February 2, 2016. Retrieved March 3, 2016. http://www3.epa.gov/epawaste/nonhaz/municipal/

25 "Waste in Lebanon" 2013.

26 Hubbard, Ben. "Lebanese Seethe as Stinking Garbage Piles Grow in Beirut and Beyond," *NYT* July 27, 2015. Retrieved March 3, 2016. http://www.nytimes.com/2015/07/28/world/middleeast/lebanese-seethe-stinking-garbage-piles-grow-beirut.html?_r=0

27 United Nations, "Lebanon Energy and Water Sector Plan," p. 3

Haiti, in which the international community was handed responsibility for vulnerable populations affected by cholera with little government support and at a large economic cost.[28] [29]

Behind these extant motivators of cholera also lie deeper, underlying factors. Chief among these is the consistent underfunding of humanitarian and development programs in Lebanon. Over the last three years, UNHCR Lebanon, the largest health services organization in Lebanon for refugees, has increased its appeal by almost 6000 percent to make up for the rapid influx in refugees to Lebanon. In 2015, UNHCR Lebanon's $556 million budget was only 52 percent funded.[30]

Humanitarian aid is also favored over development aid. Currently, the majority of UN aid prioritizes "basic needs and essential services" (95 percent of the 2015 UNHCR Lebanon appeal), in particular "basic and domestic items," such as foodstuffs and basic non-food items due to the nature of refugee aid.[31] However, some of the largest factors leading to Syrian refugees' poor living conditions in Lebanon are financial constraints, poor health care, and inadequate shelter.[32] Currently, over 50 percent of Syrian refugees in Lebanon are at risk of losing their current shelter due to financial constraints. This has forced many Syrian refugees to live in poorer conditions with higher risks of cholera and other water-based illness.[33]

A second underlying concern is the tension between the Government of Lebanon and its host populations. Beyond health services and public infrastructure, the influx of more than 1.5 million Syrian refugees into Lebanon over the last five years has made a considerable impact on all aspects of Lebanese society, in some areas pushing it to the brink of collapse. In terms of religion, most Syrian refugees in Lebanon are Sunni Muslim. Even if half of all Syrian refugees were to return to Syria

28 Crossette, Barabara "Health Services Still Lag in Haiti, Shadowed by Cholera" Pass Blue, June 15, 2015. Retrieved April 15, 2016. http://passblue.com/2015/06/15/health-services-still-lag-in-haiti-shadowed-by-cholera/
29 McKenzie, David and Swails, Brent "Sanctuary Without End: the Refugees the World Forgot" CNN, 2015. Retrieved April 15, 2016. http://www.cnn.com/interactive/2015/10/world/dadaab-refugees/
30 UNHCR "Lebanon: Global Appeal 2015 Update" p. 4.
31 Ibid. p6.
32 UNHCR "3RP Lebanon" May 6, 2016, p. 112.
33 UNHCR "Housing and Property Issues in Lebanon" pp 31-34.

tomorrow, the presence of 700,000 Sunni Muslims significantly upsets the preexisting, delicate Christian-Shi'a-Sunni religious balance in Lebanon.[34] Syrian refugees also occupy some 60 percent of the Lebanese labor market, which experts suggest represents a $3 billion strain on the Lebanese economy.[35] Irregular and uncontrolled movement into Lebanon (which some suggest is around 2,500 daily) also presents serious security concerns.[36] In November of 2015, between 37 and 43 were killed in a suicide attack in a wealthy suburb of Beirut, for which The Islamic State of Iraq and the Levant (ISIL) claimed responsibility, sending shock waves through Lebanese society.[37] Since then, roughly 600 to 1000 have been killed as a result of spillover fighting from the Syrian Civil War in Lebanon, including dozens in the Lebanese military and the loss and recapture of the town of Arsal in South-East Lebanon.[38] [39]

Initial tolerance of Syrian refugees by Lebanese citizens has gradually turned to resentment. While areas without Syrian populations hold overall neutral opinions towards Syrian refugees, areas hosting large number of Syrians show high levels of animosity among Lebanese citizens.[40] Lebanese nationals living in the Akkar provience, for example, which has a high density of Syrian refugees, overwhelmingly support "stopping the receiving of Syrian refugees" in Lebanon as well as the implementation of discriminatory policies towards Syrians refugees, such as the revocation of free

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34 Karam, Michael "How Lebanon is Coping with More than a Million Syrian Refugees" *The Spectator* November 14, 2015. Retrieved April 16, 2016. http://www.spectator.co.uk/2015/11/how-lebanon-is-coping-with-more-than-a-million-syrian-refugees/

35 Zeid, Mario Abou, "A Time Bomb in Lebanon: the Syrian Refugee Crisis" Carnegie Endowment for International Peace, October 6, 2014. Retrieved April 16, 2016. http://carnegieendowment.org/syriaincrisis/?fa=56857

36 Ibid.

37 "ISIS Claims Responsibility for Attack in Southern Lebanon" *The Daily Star* November 12, 2015. Retrieved April 16, 2016. https://www.dailystar.com.lb/News/Lebanon-News/2015/Nov-12/322821-isis-claims-responsibility-for-beirut-southern-suburb-attack-statement.ashx

38 Holmes, Oliver, "Lebanese Pull Out of Lebanese Border Town with Captives" *Reuters* August 7, 2014. Retrieved April 16, 2016. http://www.reuters.com/article/us-lebanon-security-arsal-idUSKBN0G70HC20140807

39 "Tripoli Put Under Army Control" *The Daily Star* December 3, 2013. Retrieved April 16, 2016. http://www.dailystar.com.lb/News/Lebanon-News/2013/Dec-03/239721-tripoli-put-under-army-control.ashx#axzz2mOyKDSEf

40 Harb and Saab, "Social Cohesions and Intergroup Relations: Syrian Refugees and Lebanese Nationals in Bekaa and Akkar" *American University of Beirut,* May 2014, p. 21.

speech and the right to work.[41]

In the event of a large outbreak of cholera in Syrian refugee settings, such resentment could interfere with the distribution of aid and partnership between the government and refugee organizations. Social cohesion has been identified as a key factor in engaging with multiple international actors and implementing an effective humanitarian intervention, especially in places where "communities are torn apart by conflict or separated by displacement."[42] In Somali refugee camps in Kenya, for example, tension between refugee populations and the Government of Kenya has significantly disrupted channels for humanitarian aid and efforts to prevent cholera, despite severe and repeated outbreaks.[43] Thus, in a cholera outbreak in refugee settings in Lebanon, Syrian refugees would be especially vulnerable to severe affects of cholera infection due to the already high tension between Syrian refugees and Lebanese citizens.

Beyond social tension, the Government of Lebanon's lack of resources for health and environmental services present another underlying cause for the high risk of cholera in Lebanese refugee settings. While the Lebanese economy has rebounded from its external and internal conflicts, it is still very fragile. In the last decade, Lebanon's public debt ranged from 130 to 185 percent of total GDP, the fourth highest in the world.[44] [45] While there have been numerous internal initiatives to improve the Ministry of Water and Energy, as well as external from Western Donors, the World Bank, and large Arab banks, all have failed due to lack of consistent funding and ineffective implementation by the Government of Lebanon. Indeed, the Lebanese "You Stink!" protests last summer originated

41 Ibid. p. 26.
42 URD, "Chapter 2: Factors Affecting Participation in Humanitarian Responses" *Participation Handbook for humanitarian field workers* p. 59.
43 Kirui and Mwaruvie, "The Dilemma of Hosting Refugees: A Focus on the Insecurity in North-Eastern Kenya" *International Journal of Business and Social Science* (3)(8) April 2012. pp 164-166.
44 "2015 Country Comparisons of Public Debt: GDP" CIA World Fact Book 2015, Retrieved March 5 2016. https://www.cia.gov/library/publications/the-world-factbook/rankorder/2186rank.html
45 "2000 – 2016 Lebanon Government Statistics" *Trading Economics* February 2016, Retrieved March 5, 2016. http://www.tradingeconomics.com/lebanon/government-debt-to-gdp

from the Lebanese Government's inability to pay the salaries of its garbage collectors.[46] Thus, even if vulnerable populations in Lebanon were a priority for the Government of Lebanon and there was little tension between host and refugee populations, the Government of Lebanon would still lack the resources to effectively mitigate the risks during a cholera outbreak.

Direction

Overcrowding, inadequate housing, and poor public sanitation systems, along with an underlying lack of resources in the international refugee-aid system and the Government of Lebanon, have created a "perfect storm" for a potential outbreak of cholera in refugee settings. To position these factors, this paper approaches cholera in Lebanon from five unique perspectives: a) the current Lebanese Minister of Health, Wael Abou Faour, b) the King of Jordan, c) Bob Corker, chairman of the United States Foreign Relations Committee, d) a UNHCR-funded school teacher working in a refugee population in Lebanon, and e) a mother of a refugee family living in unsanitary conditions in Lebanon.

Based on these five distinct perspectives, this paper identifies an appropriate response to the increased risk of cholera in Lebanese refugee settings. In doing so, this paper also approaches more complex questions vis-a-vis the international refugee regime, such as: what past missteps can be avoided in a potential cholera outbreak in Lebanon? Who is responsible for refugee health? And what is the relationship between host-countries and international refugee organizations?

Five Perspectives of cholera in Lebanon

1. Wael Abou Faour, Minister of Health, Government of Lebanon

As Minister of Health for the last two years, and before that Minister of Social Affairs, I have

46 "Talking Trash: Lebanon's Citizens are Fed Up With Their Do-Nothing Politicians" *The Economist* August 29, 2015. Retrieved March 8, 2016. http://www.economist.com/news/middle-east-and-africa/21662368-lebanons-citizens-are-also-fed-up-their-do-nothing-politicians-talking-trash

worked hard to increase agriculture and tourism, and work with food producers across Lebanon to ensure the enforcement of food safety rules.[47] Still, so many problems plague our great country. The root of these problems is Lebanon's political paralysis. For one, the government is divided into non-elected, fixed seats based on ethnicity, which are then further divided into the more than twenty political parties. It is impossible to quickly and effectively pass legislation that benefits all these diverse groups. Moreover, the Lebanese Government maintains a weak presence in more than half the country. Even before the start of the Syrian Civil War, which has incited violence in rebel groups and turned many Lebanese towns into war zones, Hezbollah was considered more powerful than the Lebanese military.[48] [49]

In last summer's "You Stink!" protests, I was blamed publicly, along with the Minister of Waste Management and the Prime Minster, for Lebanon's failing health system. They even asked for my resignation! But with this deep gridlock, $40 billion public debt, and general lack of autonomy, who is to blame? The root of the crises stemmed from parliament failing to pay garbage collectors, something no public policy can fix.[50]

It is because of these pitfalls that in the event of an outbreak of cholera in refugee settings, international donors and governments should invest in projects for refugees implemented by the Government of Lebanon. To build a better Lebanon for tomorrow, we need to invest in a better Lebanon today, rather than NGO and advocacy groups working on the ground. Not only will this put Syrian refugees to work and help address the stereotype of Syrian refugees in Lebanon, but it will also strengthen the faith of Lebanese citizens in their own Government, which will in turn help the

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47 "Profiles: The Cabinet," *Lebanon Wire* see Wael Abou Faour, Minister of State 12 July, 2008. Retrieved March 29, 2016.

48 Enders, David, "Syrian Violence Finds its Echo in Lebanon" *McClatchyDC*, February 13, 2012. Retrieved March 29, 2016. http://www.mcclatchydc.com/news/nation-world/world/article24724093.html

49 Pan, Esther, "Lebanon's Weak Government" *Council on Foreign Relations* July 26, 2006. Retrieved March 29, 2016. http://www.cfr.org/lebanon/lebanons-weak-government/p11135

50 Kenner, David, "There's Something Rotten in Lebanon" *Foreign Policy,* August 25, 2015. Retrieved March 29, 2016. http://foreignpolicy.com/2015/08/25/theres-something-rotten-in-lebanon-trash-you-stink/

Government run effectively.

2. Abdullah II, King of Jordan

Since the outbreak of the Syrian Crises, the Government of Jordan has led the international effort in refugee aid and refugee health. A cholera outbreak in Lebanese refugee camps and its spreading to Jordanian camps along the Syrian border would mean a huge step backwards in this regard. To ensure adequate protection against cholera, the Government of Jordan must strengthen its relationship with international donors and its largest ally, the United States, in order to work closely with international aid groups.

I'll also tell you something I might not say publicly. Beyond health concerns, increasing aid to refugee areas inside Jordan would also be beneficial to the monarchy's long-term domestic policy. Maintaining adequate refugee housing facilities keeps Syrian refugees outside major cities and near the Syrian border. This will increases tourism, our biggest economic sector, and decrease the growing unregulated, non-taxable Syrian labor market. Keeping Syrians near the border also facilitates the repatriation of the some 600,000 Syrian refugees in Jordan after the conflict, unlike the myriad of Palestinians, Iraqis, and Sudanese refugees who now dominate our population. The humanitarian and development aid from these refugees is also crucial to the economic security of my state. For the last two years, foreign aid has been the tipping point in ensuring economic growth. In 2013 alone, Jordan profited $1 billion in direct investments from the Syrian conflict alone.[51] As the leader of a strong state in a crumbling region, this is something I cannot turn away from.

3. Bob Corker, US Senator and Chair of the Foreign Relations Committee

Since the inception of the Syrian Conflict in 2012, global terrorism has increased significantly.

51 Dhingra, Reva, "Syrian Refugees and the Jordanian Economy," *Muftah*, August 21, 2014. Retrieved March 29, 2016. http://muftah.org/syrian-refugees-jordanian-economy/#.VvtLiGErIUQ

In such times, maintaining the security of the United States is paramount, but we must also be sympathetic to those in need of help. My most famous quote about this issue is that we must "show compassion to the destitute, while still protecting the United States."[52] We need to support Syrian refugees in need, but also implement the necessary security measures to protect our homeland.

To do this—and combat the increasing risk of a cholera outbreak in Lebanon—we must increase funding to Lebanese health services. In the short term this investment would improve cholera awareness, access to health services, and quality of care to combat a potential outbreak of cholera for vulnerable refugee populations in Lebanon. Beyond compassion, however, we must also ensure the security of the United States. In the long term, an investment in Lebanon is also an investment in the United States. Revitalizing health services in Lebanon would stabilize and secure a key ally and geo-strategic asset for the United States in an increasingly hostile region. Such an investment would also prevent Syrian refugees in Lebanon from seeking a second country of refugee, such as the United States, decreasing the risk of terrorism and background checks.

The United States has much to gain in assisting Lebanon in improving conditions of Syrian refugees. If we fail to act now, however, the United States could face an unprecedented influx of refugees, or worse, an uncontrollable rise in terrorism like we have seen in Europe.

4. A UNHCR school teacher in Lebanon

I became a teacher for UNHCR for a group of Sunni refugees in my home city, Tripoli four years ago when the conflict was just beginning. When I first started, the state of my city was poor. Damage from rocket attacks from the Israeli invasion, as well as Sunni-Shia fighting, was evident throughout the city. Now the city is under rule of martial law and is completely divided between pro-

52 Fitzgerald, Sandy, "Sen. Bob Corker: Visa Waiver Program More Concerning Than Refugee Crises" *NewsMax* November 19, 2015. Retrieved March 3, 2016. http://www.newsmax.com/Newsfront/bob-corker-visa-waiver-program-concerning/2015/11/19/id/702880/

Assad and pro-resistance factions, ironically by "Syria Street," which runs throughout the city.[53] What's more, the half million Lebanese citizens in Tripoli, the majority of which live in broken-down apartments and in poverty, now also host some 260,000 Syrians.[54]

Before the war, Tripoli was in desperate need of repair; now, it is in a state of emergency. Health is only of tertiary concern. I'm happy and willing to help my students with health education and job training, but so few of them come to school. My male students have opted to work in local industries or join local gangs, while an increasing number of my female students are married off before they have reached age fifteen!

Politicians in Beirut talk of investing in our education and country's future. As if! Throughout my lifetime I have seen my government fail time and time again. Even with significant support from abroad, like after the Lebanese Civil War, the government only retains limited control over central areas of Tripoli. No amount of money and no government program will be able to root out the deep insecurity and distrust of government embedded in my hometown. Those on the ground have realized that we will be living in a state of emergency long after the end of the Syrian Conflict, likely for the rest of our lives. If my government and the international community is genuinely interested in aiding us, they should provide items we can use like cash assistance, water and food, or WASH materials, and not help us build a new school or latrine which will take years just to be destroyed, anyway. If you saw your friend struggling to survive every day, would you ask him what he wants over the next five years, or give him what he needs today?

5. A Syrian refugee mother of child affected by cholera

I am a mother of four who fled from Homs a little more than a few months ago after my house

53 Urquhart, Conal, "In Tripoli, One Street Brings the Syrian War Home" *Time* March 9, 2015. Retrieved March 31, 2016. http://time.com/3694192/in-tripoli-one-street-brings-the-syrian-war-home/

54 UNHCR "Syria Regional Refugee Response: North Lebanon" Updated March 15, 2016. Retrieved March 31, 2016. http://data.unhcr.org/syrianrefugees/region.php?id=87

was demolished in government-led air strike. Two of my children and my husband were killed in fighting. I was lucky to escape with my life and build makeshift tent east of the Lebanese city Zahl with some of my relatives. In such poor conditions, my two remaining children and I have suffered a variety of medical issues as a result of malnutrition and lack of clean water. This week, one of my children contracted cholera. I took her to my primary health caretaker, a local clinic run by Doctors Without Borders, which cost me 5,000 LBP.[55] Before I left Syria I was an accountant at a major bank making this amount in less than a day. Now 5,000 LBP is a week's salary selling fruit on the street!

The doctor gave us some basic medicine, information on how cholera is contracted, and rushed us to a local hospital. Once we arrived at the hospital, it took a few hours to treat my daughter in intensive care because of the lack of beds, our refugee status, and (more likely), my inability to pay a bribe. All this time, my daughter vomited profusely and had severe watery diarrhea in the bathroom of the hospital's waiting room. Luckily, after receiving proper treatment, my daughter survived her cholera infection with no major complications. Still, I am unable to pay for her treatment and waiting for UNHCR to approve my daughter's hospital bills.[56] Missing work for a whole week has also put huge economic strain on a family already struggling to survive. If another family member becomes sick with cholera again, I am not sure if I will be as willing to seek professional care.

Cost assistance and increased awareness are vital to preventing cholera in the future. There will always be health risks associated with living in squalor conditions. However, as I discovered from my daughter's infection, prevention is better than treatment. If I had known about how cholera was contracted and had more money available to me to facilitate my daughter's treatment it would have saved me, as well as UNHCR, a significant amount of money and hardship.

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55 UNHCR Lebanon, "Guidelines to Referral Health Care in Lebanon," January 2014. Retrieved March 31, 2016. https://data.unhcr.org/syrianrefugees/download.php?id=4277. p. 8.

56 Ibid. pp. 9-10.

Response Plan

An effective response plan to the growing risk of cholera in Lebanese refugee settings balances these five perspectives to dovetail with the needs and goals of its beneficiaries at every level of implementation. As such, this response is divided into two subgroups: *direct impacts,* ground-level responses over a short period of time, and *capacity and resiliency impacts,* higher-level government and international level planning spanning many years. Together, these two levels help join the wide variety of needs of all actors involved in creating and implementing a successful response plan.

Direct Impacts

The most crucial beneficiaries in combating cholera in Lebanese refugee areas are the affected populations themselves. For any response plan to be viewed as legitimate by the international community or refugee populations, a response to cholera must involve the distribution of essential contingency stock materials, such as WASH supplies to at-risk populations. This significantly reduces overall expenditure and cases of cholera, compared to retroactive treatment and also facilitates funding and engagement with stakeholders before the onset of a full outbreak.[57] [58] However, not all preventative measures produce equal returns in combating cholera outbreaks, as results vary widely with the environment of each cholera outbreak.

In Lebanese refugee camps, where most have left their country of origin due to destruction of homes or political violence, few have kept or prioritized the need for basic sanitation.[59] Despite the Syrian mother perspective's status as a former banker, for example, her displacement has left her without access to even the most basic household materials integral to the prevention of cholera.

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57 Naficy et al. "Treatment and Vaccination Strategies to Control cholera in Sub-Saharan Refugee Settings" *Journal of the American Medical Association* 279 (7). 2013. See table 2.

58 Elizabeth Lamond and Jesee Kinyanjui, “Cholera Outbreak Guidelines: Preparedness, Prevention, and Control” OXFAM, June 2012. pp. 12-17.

59 Muhamed et al, “Epedmic cholera in Kakuma Refugee Camp, Kenya 2009: The Importance of Sanitation and Soap” *Kenyan Medical Research Institute / Center for Disease Control and Prevention*, Nairobi, Kenya, October 2011. p 1.

Studies have shown that using soap can reduce the chances of cholera infection by upwards of 40 percent.[60] In two separate studies on similarly displaced Somali refugees in the Kenyan Kakuma refugee camp, experts found that low-cost items such as soap and water containers have the largest impact on decreasing rates of cholera in refugee areas.[61] [62] In such circumstances, the presence of soap in households would have led to an overall 27 percent reduction in the incident rate of cholera, a larger impact than using private latrines or eating sanitary food.[63] Thus, providing low-cost WASH materials like soap, clean storage containers, and water purification sachets, is an efficient way to dramatically reduce the number of potential cholera outbreaks in Lebanese refugee areas.

Community awareness of cholera is a second area critical to cholera prevention infections and the effective use of WASH supplies. Many, such as the UNHCR teacher's perspective above, identify physical prevention methods of cholera, such as better infrastructure or diet. However, higher rates of education on sanitation practices, either spread informally by word of mouth or cultural practices, or formally through sanitation guidebooks or clinics can lead to an equally reduced risk of cholera outbreak and transmission in refugee camps.[64] Moreover, even if basic WASH materials are successfully distributed, they have little affect if informed and careful steps are not taken during their implementation. Disinfectant sachets and clean water containers, for example, have a significantly lower impact without proper education on their use.[65]

A second consideration of a direct response is vaccination. Cholera vaccination effectively limits cholera infection and also reduces the reliance on other prevention methods. However, there are

60 Curtis V and Cairncross S, “Effect of washing hands with soap on diarrhea risk in the community: a systematic review.” *Lancet Infect Dis* 3, 2003. pp 275-281.

61 Ibid. p6.

62 Shultz et al, “cholera Outbreak in Kenyan Refugee Camp: Risk Factors for Illness and Importance of Sanitation” *American Society of Tropical Medicine and Hygiene* 80 (4) April 2009, p 646.

63 Peterson EA, Roberts L, Toole MJ, Peterson DE, “The effect of soap distribution on diarrhea: Nyamithuthu Refugee Camp” *Int J Epidemiology* 27, 1993. pp. 520-524.

64 Einarsdottir et al, “Health Education and cholera in Rural Guinea” *International Journal of Infectious Diseases* (5)(3): p. 136.

65 Sim, Christianna, "Control and Intervention of cholera Outbreaks in Refugee Camps" GIS Journal of Global Societies (1). 2013. pp. 10-13.

several downsides to distributing cholera vaccines to Syrian refugees, which ultimately outweigh its benefits. First, the timeframe of cholera vaccination is not practical with that of Syrian refugees living in Lebanon. Those living day-to-day, like the Syrian mother perspective identified above, have little economic flexibility to change their daily routine to travel to a vaccination site and wait six-weeks for treatment. Indeed, major considerations for not distributing cholera vaccines during the 2010-2011 outbreak in Haiti were time and logistic challenges.[66] Moreover, it is extremely unlikely Syrian refugees will find stable living conditions not prone to cholera infections in the two year effective period of most cholera vaccines, which would only necessitate further vaccination, at further expense.[67]

Second, there is debate over cholera vaccination's cost-effectiveness as a whole, varying largely with the severity of the outbreak. Very severe outbreaks, such as in Haiti, can benefit from cholera vaccinations.[68] [69] For longer-term, less severe outbreaks like Lebanon, however, studies have shown a vaccination's relative cost margin compared to basic preventative measures is small, due to the low supply of cholera vaccines internationally. Some suggest that unless the price of cholera vaccinations drops to $0.22 per person, from recent prices of $1.8 and $ 4 per person, oral vaccination be impractical.[70] [71] However, more research is necessary to better weigh these factors.

Rate of return and cost-effectiveness analysis are also important considerations for direct impact responses overall. International actors providing ground-level implementation require a lightweight plan with measurable results. Providing only basic WASH materials and necessary educational information provides a base-level of direct response with a low relative cost, compared to similar

66 "Von Seidlein L, Deen JL. “Considerations for oral cholera vaccine use during outbreak after earthquake in Haiti, 2010–2011” (letter). *Emerging Infect Dis*. July 2012. Retrieved April 18, 2016. http://dx.doi.org/10.3201/eid1807.120071

67 “How Long do Vaccinations Last” The Travel Doctor, retrieved April 18, 2016. http://www.traveldoctor.co.nz/vaccinations.aspx

68 Ibid.

69 Cook et al., “Cost Effectiveness of New Generation Oral Cholera Vaccines; a Multisite Analysis” *Value Health* (12), 2009. pp 899-908.

70 Naficy, "Treatment and Vaccination Strategies" 1998 p. 1.

71 Khan et al. "Coverage and cost of a large oral cholera vaccination program in a high-risk cholera endemic urban population in Dhaka, Bangladesh" *National Institute of Health* October 22, 2013. p. 1.

ground-level cholera preventions, such as building cholera Treatment Centers, refugee housing, and vaccination. While inadequate housing is largely viewed as a primary vector of cholera outbreaks in refugee settings, building even the most inexpensive structures have similar, if not smaller, impacts on cholera outbreaks than simple preventative measures.[72] [73] Thus, in Lebanon, where the majority of Syrian refugees live in urban housing or in rural areas outside of government control, building adequate housing or providing mass vaccinations would result in an extremely large cost, likely to the international community. Instead, distributing WASH supplies and educational information provides a lightweight alternative with a higher rate of return.

Together, providing basic WASH supplies and education on water sanitation practices is the most effective method of preventing cholera at the ground level in Lebanese refugee settings. As expressed in the perspective of the Lebanese Minister Wael Faour above, a large roadblock facing the implementation of a wide-scale anti-cholera campaign is sectarianism and division within the Government of Lebanon. This hinders the Government's ability to effectively make decisions and implement direct treatment on the ground level. Thus, these direct impact responses should be implemented by NGOs already in place, instead of the Government of Lebanon. This shifts ground-level implementation away from the Government of Lebanon to international NGOs, which are better suited to provide short-term assistance in remote and sectarian-based areas otherwise largely unreachable to the Government of Lebanon.[74]

*Capacity and Resilience Impact*s

72 Elizabeth Cullen Dunn, "Better Than a Tent, Worse Than a House" *Slate Magazine* October 11, 2015. Retrieved April 2, 2016.
http://www.slate.com/articles/technology/future_tense/2015/10/ikea_gives_10_000_flat_pack_shelters_for_refugees.html
73 IWSAD / SAG, "Evaluation of the WASH Response to the 2008-2009 Zimbabwe cholera Epedemic and Preparedness for Future Outbreaks" *Institute of Water and Sanitation Development* July 2009, p. 16.
74 Pan, Esther, “Lebanon's Weak Government”

Long term investment and control strategies are the most effective way to combat cholera and promote sustainable development for Lebanon as a whole. While the short term strategies above can substantially reduce cholera infection, they do little to impact the root causes of the disease itself, including limited access to health services, poor sewage treatment, and a lack of drinking water. Indeed, outside of very vulnerable populations and situations of environmental disaster or conflict, cholera itself is extremely rare, almost never resulting in death.[75] As mentioned, cholera is not a disease of high transmission or biological complexity, but of poverty and lack of access. Therefore, an investment attacking the root causes of cholera rather than its symptoms is the only way to effectively reduce cholera in vulnerable populations in Lebanon, especially considering the cyclical nature of short-term funding and the longevity of the Syrian conflict.[76]

I propose that such an investment be divided into two parts. The first is a deeper investment in UNDP Lebanon's Host Community Support Projects (HCSPs). These projects establish schools, job training, and community resiliency programs in the most vulnerable regions to refugees and Lebanese citizens.[77] A second investment would target capacity building in Lebanese health and waste services. Such a partnership would consist of a 10-20 year endowment and a team of international advisors to assist Lebanon's transition.[78] Such a regional and structural investment in Lebanon would address the root causes of cholera outbreaks, education, social cohesion, and health, beyond the scope of humanitarian aid or direct interventions.

As evident from the US, Jordanian, and Lebanese governments' perspectives above, it is mutually beneficial to improve government health services to sustainable serve refugees in Lebanon.

75 Number and Types of cholera Cases Reported" World Health Organization / Global Health Observatory, " 2014. Retrieved April 2, 2016. http://www.who.int/gho/epidemic_diseases/cholera/cases/en/

76 Fisher, Max. "Political science says Syria's civil war will probably last at least another decade" The Washington Post October 13, 2013. Retrieved April 2, 2016. https://www.washingtonpost.com/news/worldviews/wp/2013/10/23/political-science-says-syrias-civil-war-will-probably-last-at-least-another-decade/

77 UNDP Lebanon Lebanon Host Communities Support Project: In Depth" Retrieved April 4, 2016. http://www.lb.undp.org/content/lebanon/en/home/ourwork/Response_to_the_Syrian_Crisis/in_depth/

78 USAID Lebanon, "Lebanon Country Development and Cooperation Strategy 2014-2018" 2014. p. 9.

For neighboring countries and the international community, an investment in Lebanon would discourage Syrian refugees from seeking countries of second refuge and reduce reliance on international aid. For the United States and Jordan, the external displacement of Syrians to neighboring countries presents a variety of serious security concerns and the potential of such populations migrating to secondary and tertiary countries of refuge augments such concerns substantially.[79] For refugees, the increasing potential for Syrians in neighboring countries to pursue alternative and irregular migration also raises deep concerns for a generation of Syrians without education or membership to a political entity.[80] The largest driver of these secondary migration movements in the Syrian Crises has been funding drying up to food and water assistance programs.[81] Transitioning to a development-based approach would create jobs for refugees and assist the Government of Lebanon in implementing health programs. This would not only ensure refugees do not migrate to secondary countries, but also ease Lebanon's long-term reliance on international aid.

For the United States, the largest donor to UN development programs and Lebanese development aid, allocating additional funds for development programs in Lebanon is more cost effective than current plans for delivering aid. Between 2013 and mid-2015, the US Government has provided some $4 billion in humanitarian assistance of which $616 million was to Lebanon.[82] In comparison, the US has provided around $80 million in direct aid to the Government of Lebanon in 2013, the majority of which was for military assistance.[83] In 2016, UNDP Lebanon's budget totaled less than $80 million.[84]

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79 House of Representatives of the United State of America, "Syrian Refugee Flows: Security Risks and Counter terrorism Challenges" *Committee on Homeland Security,* November 2015. Pp. 2-4.
80 USAID, "No Lost Generation 2015 Syria Crises Update" 2015. P. 3-5. Retrieved April 2, 2016.
81 REACH, "Migration trends & patterns of Syrian asylum seekers traveling to the European Union Assessment Report" September 28, 2015. P. 9.
82 USAID Lebanon, "Country Development and Cooperation Strategy 2014 – 2018" p. 3.
83 "US Threatens to End Aid to Lebanon" *Times of Israel* October 11, 2014. Retrieved April 2, 2016. http://www.timesofisrael.com/us-threatens-to-end-aid-to-lebanon-if-iran-sends-arms/
84 UNDP, "Our Projects: Data" February 29, 2016. Retrieved April 4, 2016. http://open.undp.org/#2016/filter/operating_unit-LBN

As a result of this imbalance, the United States is building an unsustainable reliance on NGOs. NGOs are essential to delivering short-term prevention methods, as mentioned above. However, it is more effective for the international community to create a larger, long-term partnership with the Government of Lebanon instead of funding an overwhelming variety of NGOs over a period of 10 to 20 years. Not only would this help build real sewage removal and water projects to endure after the conflict, but it would also simplify and reduce the international community's overall channels of assistance to refugees in Lebanon. Such long-term projects are estimated to cost between $1 and $3 billion, a fraction of the United States' projected contributions in humanitarian aid over the next decade.[85] Crucially, the only way to implement a sustainable health infrastructure in Lebanon is through investment in the government itself. An investment in the Government in Lebanon is also an investment in the international community's long-term economic security and also an opportunity to reduce long-term over-reliance on NGOs.

Trade Offs

The direct and long-term interventions identified above constitute an effective response to the growing risk of cholera in refugee situations in Lebanon on the ground, regional, and governmental level. Still, it is important to briefly acknowledge downsides to such a response and trade-offs of alternative response plans.

One such downside is the favoring of development aid over humanitarian aid. The root causes of cholera stem from larger socio-economic and political problems best targeted by international development. However, too large of a divestment in humanitarian services could lessen the available of health services in favor of sanitation supplies and basic information. While my discussion shows this is a cost-effective way to reduce the risk of cholera, it could also be seen as abandoning vulnerable

85 USAID Lebanon "CDCS 2014-2018" p. 3, p. 7.

refugee populations in favor of cheaper solutions. For example, on one hand, if the refugee mother's perspective above had access to better sanitation prevention her daughter would significantly less likely to become infected by cholera. On the other, if she did become infected, such a response plan could be blamed for depriving her of more expensive cholera treatment services.

Many also argue that prioritizing development aid over direct humanitarian aid is irresponsible because it fails to use all available tools to limit the terrible effects of cholera outbreaks, no matter the price. Von Seidlein et al suggest in a heated editorial that those who have lived through "the agonizing indignities of a cholera attack...[understand that] the economic argument is out of hand...the argument that [supplies] could be too expensive is morally questionable, if not to say revolting."[86] This paper recognizes that although it is important to remain optimistic, it is equally, if not more important, to be practical in terms of the extent of international resources to craft responses to cholera outbreaks. This paper also identifies deeper factors, such as a weak health infrastructure, as the root causes and solutions in preventing a future cholera outbreak. Until these root causes are addressed, cholera, as well as a variety of associated health issues, will continue to affect vulnerable populations in Lebanon.

Another contentious trade off is investment in the Government of Lebanon. As stated, to fully combat cholera, one must target its underlying causes. However, some find issue with partnership between the Government of Lebanon and the international community, or the capacity of the Government of Lebanon itself. The UNHCR schoolteacher's perspective, for example, represents how many Lebanese have lost faith in the international community and the Government of Lebanon over the last quarter of a century. Crucially, to what extent would the goals of the international community conflict with those of the Government of Lebanon? Also, given the weak state of the Government of Lebanon, is it even able to make positive changes in health and social services, even with support from the international community? Why should the international community invest in Lebanon's faltering

86 Von Sedlein et al. "Considerations for Oral Cholera Vaccine" July 2012.

health care system when so many other countries lack basic health services? While these questions are beyond the scope of my research, I contend that despite these criticisms, the Government of Lebanon remains a vital and axiomatic actor in providing health services to Syrian refugees.

Last, and possibly most glaring, the creation of development programs targeting refugees is likely to induce tension between Lebanese citizens and refugees. Indeed, despite its success, a major criticism of UNDP Lebanon, for which I advocate increased investment, has been the overshadowing of Lebanese citizens. As an example, while almost 28 percent of Lebanese live on less than $4 per day, many Syrian refugees are sometimes 'paid' to attend free education, job training, and cash subsidies not available to Lebanese citizens.[87] [88] The poor condition of many Lebanese citizens raises questions crucial to the legitimacy providing humanitarian aid itself. While it is traditionally accepted that the most vulnerable populations should be given priority to international aid, it unclear in Lebanon who is the most "vulnerable," or even who has the authority to make such a decision. In Kenya, for example, a valid criticism of the international community is the prioritizing of international sympathy and aid for refugee populations, despite severe outbreaks of cholera in Kenyan populations in 2008.[89] Increasing international support to the Government of Lebanon could also induce tension between Lebanon other countries hosting Syrian refugees. One might ask: if Lebanon receives increased investment for hosting refugees, what about Jordan and Turkey? Or, should Lebanon receive a carrot for its crippling health infrastructure?

Conclusion

This paper positions the issue of cholera in Lebanese refugee settings through five unique

87USAID Lebanon, "Country Development and Cooperation Strategy 2014 – 2018" p. 6.
88European Action Service, "Syrian Response and Humanitarian Aid," June 15, 2015. p. 18. Retrieved April 5, 2016. http://eeas.europa.eu/delegations/lebanon/projects/list_of_projects/20150615_6_en.pdf
89 Shikanga et al., "High Mortality in a Cholera Outbreak in Western Kenya after Post-Election Violence in 2008" *American Journal of Tropical Medicine and Hygene* (81)(6) 2009. p. 1.

perspectives of public health actors and discusses a response plan to prevent potential outbreaks, focusing on the distribution of essential sanitation materials and the need for greater international partnership with the Government of Lebanon in the health services sector.

In identifying implications of a cholera outbreak in Lebanese refugee settings and a possible response, gaps in the available literature have become apparent. Chief among those is the lack of data on refugees in environments endemic to cholera. While many articles and news sources report on specific cholera outbreaks or conditions in refugee camps, few sources measure cholera outbreaks and responses in refugee populations over a period longer than 2-3 years. This research is especially relevant to the proposed response identified in this paper due to its focus on long-term, development aid, and considering that Syrian refugees will likely remain in Lebanon for 15 years or longer. A second gap in research in cholera is the impacts of cholera vaccine. While there is some research on cost-effectiveness in specific scenarios, there is little information on the effects of cholera vaccination after the initial 6 month to 1-year period. Crucially, there has been little study on whether cholera vaccines can limit further disease spreads and many questions of cholera vaccines remain in academic and humanitarian discourses.

These gaps also present a possible direction for future research. To expand this paper beyond the scope of its rubric, I would also analyze health conditions of Syrian refugees, current treatment methods implemented by NGOs in Lebanon, and also refugee health funding. Such research would support a more informed and detailed recommendation of the relative cost-effectiveness of direct versus long-term impacts, as well as the available funding for such a response.

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