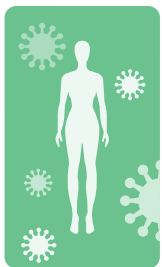


Lebanon Country Report

Covid-19 and Social Control

PRIVACY POLICY

PUBLIC HEALTH



DATA MANAGEMENT



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Table of Contents

Summary	4
Methodology	5
Country Context	6
Outbreak of the Covid-19 Pandemic and the Lockdown Response	6
Political and Economic Background	7
Public Health Overview	8
Lebanon’s Healthcare System	8
Impact of the Economic Crisis and the Explosion on the Healthcare System	8
Vaccine Rollout	10
Refugees’ Access to Healthcare	10
Lebanon’s Path towards a Contact Tracing Application	10
Assessing the Public Health Response	12
Evaluating the Lockdown: Early Success Belies Lack of Strategy	12
Data Management Issues	13
Inaccurate Testing Data	13
Impact on Contact Tracing	14
Impact on Aid Distribution	14
Evaluating the Role of Ma3an and Other Platforms in Stopping the Spread	15
Evaluating the Impact on Social Control	17
Declaration of State of General Mobilization and State of Emergency	17
The Impact of the Lockdown on Protests	17
Renewed Protests in Early 2021	18
Evaluating Privacy Measures of Ma3an and New Registration Platforms	18
Ma3an’s Privacy Measures	18
Privacy Concerns	19
New Wave of Electronic Platforms	20
Existing Privacy Threats in Lebanon	20
Impact of Covid-19 Response on Refugees and the Possibility of Social Exclusion	21
Unique Impact of the Lockdown	21
Risk of Electronic Platforms in Furthering Social Exclusion	21
Conclusion & Recommendations	23

Summary

On September 1, 2020, Lebanon introduced “Ma3an - Together Against Corona”, a contact tracing application intended to slow the spread of Covid-19, which had expanded at an accelerated rate since the country reopened the airport and ended the four-stage lockdown at the beginning of July. This report aims to assess the government’s pandemic response, and the ways it has affected social control and social exclusion, with a particular focus on Ma3an and other electronic platforms the government has launched. We examine the impact of the app and other platforms within the broader context of Lebanon’s response to Covid-19, especially the government’s decision to lock down the country, both partially and fully, over the course of the pandemic. In our analysis of the pandemic response’s impact on social exclusion, we observed the effects the lockdown and other measures had on Syrian refugees in particular.

Ultimately, the report finds that the pandemic response failed because of an overall lack of strategy, which was exacerbated by the economic crisis, poor handling of data, and inadequate and poorly implemented aid to citizens. The launch of Ma3an did not demonstrably affect the public health response, as there were flaws in the rollout, bugs in the app, and a limited user base.

At times, the Lebanese government used the lockdowns as a means to crack down on anti-government protests, but the most recent lockdown actually provoked protests, due to the government’s inability to effectively support citizens as the economy worsened, and continued opposition to widespread corruption. Moreover, the state of emergency declared in response to the Beirut blast in August 2020 also posed significant threats to people’s rights and freedoms. Neither Ma3an nor any of the other electronic platforms the government has launched present serious threats in terms of further social control, though they do all imply privacy threats. Ma3an, unlike other contact tracing apps in the Middle East-North Africa region, was never mandatory for any population group, but the more recent platforms, particularly one where citizens have to submit movement requests during the lockdown, could increase social control.

The lockdown measures were also applied unevenly to Syrian refugees and the impact was worse because of the economic crisis. Ma3an was never widely adopted by refugees and because the app was not mandatory, it did little to restrict their movement. The more recent platforms that require permission to move during the 24-hour curfew and register for a vaccine, however, present a greater threat of exclusion.

Finally, it is impossible to assess the government’s response to the pandemic in a vacuum, as the protests, which began in October 2019, and the economic collapse, which began before the pandemic, often played a larger role in influencing government decisions.

Methodology

We used a combination of desk research and qualitative interviews to assess the Lebanese government's response to the pandemic, with a specific focus on the platforms it launched to combat the disease. Initially, we conducted desk research on the Covid-19 response, producing a short summary of the situation in July 2020, before Ma3an, the contact tracing app, was launched.

Between July and August, we worked with the collaborators and other partners to draft interview questions for a range of actors. Building on these questions, SMEX researchers tailored them to fit the Lebanese context, producing three variations of the questions for different target groups. Between September and December, we conducted stakeholder interviews with the developers of the Ma3an app, independent public health experts, public health professionals, municipal officials, and Syrian refugees in the Bekaa valley. Given the sensitive nature of some of the questions, and the criticisms some interviewees leveled at the government, we offered anonymity to everyone.

Concurrently, we conducted technical assessments of the app. First, SMEX conducted a static technical assessment of Ma3an before the developers had released the code to the public. We sent the initial results to the developers, who responded to our criticisms. In December, AWO commissioned technical consultants who led a more comprehensive static technical assessment of the app, after the source code had been released. Using both the qualitative interviews and the technical assessment, we assessed the efficacy and invasiveness of Lebanon's contact tracing app.

This report reflects findings through to the end of January 2021, but no additional stakeholder interviews were conducted after December 2020. Additionally, in January 2021, Lebanon launched a platform for movement requests during the lockdown and a platform for vaccine registration. In this report, we analyze the launch of these platforms, but we did not have time to produce a rigorous technical assessment.

Country Context

Outbreak of the Covid-19 Pandemic and the Lockdown Response

Lebanon largely relied on a series of lockdowns to curtail the spread of Covid-19, taking measures to prevent people from interacting. Since the pandemic reached Lebanon in February 2020, the government has implemented curfews, restricted movement within the country, and shut down the airport.

Lebanon recorded its first case of Covid-19 on February 21, 2020. A week later, on February 28, the country closed the schools after the fourth case was discovered. Closing the schools was the first restrictive measure adopted by the government, but a wave of decisions quickly followed, culminating in a partial lockdown that began on March 15. The airport closed on March 18 and then Lebanon ordered the closure of the majority of private businesses,¹ with the exception of supermarkets, pharmacies, bakeries, and banks. In addition to closing businesses, the lockdown included a 5 pm to 7 am curfew in the early stages, and driving restrictions, meaning that cars with license plates ending in odd numbers could only be on the streets three days a week and those ending in even numbers on the other three days a week. In Beirut, police and security forces rarely enforced the curfew on pedestrians,² but did enforce restrictions on taxis and other vehicles.³

The curfew measures gradually eased throughout late May and June. On July 1, the government of Lebanon reopened Rafic Hariri International Airport at 10% capacity. By the second week of July, the number of new cases per day began to increase drastically, rising to between 70 and 140 a day. As the case count continued to climb, Lebanon announced a new lockdown on July 27.⁴ The lockdown was originally intended to extend from July 30 to August 10, with a select number of businesses, including shops, banks, and private institutions, allowed to open on August 4 and 5. However, the Beirut explosion derailed this lockdown, and led to a greater surge in cases. After the Beirut blast, the number of cases jumped from 255 daily cases on August 6 to 456 new cases on August 17. Lebanon ordered a two-week lockdown on August 18. The Beirut blast killed more than 200 people and left more than 300 thousand homeless.

In September, the number of cases continued to rise, and the contact tracing capacity reached its limit, as the epidemiological

surveillance unit could no longer effectively trace the cases.⁵ On October 1, Lebanon reported 1,248 new cases and 7 new deaths, with a cumulative 42 thousand confirmed cases. As a result, the government announced a partial lockdown of 111 towns and villages from October 4 to 12,⁶ but 58 other towns and villages were added to the original list at the end of the period because the case count continued to climb. The government also announced the closure of bars and nightclubs, though many in Beirut continued to stay open.⁷

On November 1, the total number of cases reached 82,617, along with 643 deaths. The government continued with the partial lockdown strategy that included 115 towns and villages, as well as a curfew from 9 pm to 5 am. The security forces enforced the wearing of masks. Then, on November 10, the government announced a complete lockdown for all the sectors in the country, except the health sector and vital industries, including banks and factories.⁸ In the months prior to the announcement of the two-week lockdown, Hamed Hasan, the caretaker health minister, and head of the Lebanese Order of Physicians had been advocating for a stricter lockdown to curb the spread of the virus. The head of the doctors' syndicate, Sharaf Abu Sharaf, warned of the increased number of infected doctors, and said that if no strict measures were taken, there would be no one to treat infected people in hospitals. Nurses were also impacted by Covid-19, with the number of cases among healthcare providers at more than 1,500 on November 9.⁹

The situation worsened at the end of November. By November 29, there were 125,678 cumulative confirmed Covid-19 cases and 919 confirmed associated deaths. The lockdown restrictions eased starting November 30, and all businesses including shops and malls reopened. Then, on December 23, the cumulative number increased to 163,225 cases and 1,333 deaths. Between December 14 and 21, the government increased the restrictions without closing any businesses, implementing driving restrictions and a curfew. Restaurants were allowed to open at 50% capacity, as were banks and government institutions. Then, on December 21, Lebanon detected the first case of a new coronavirus variant on a Middle Eastern Airlines (MEA) flight coming from London.¹⁰

However, in anticipation of holiday gatherings and the return of expats with dollars to spend, the government eased the curfew restrictions from December 23 to January 3, and the number of

¹ Sewell, A. (March 15, 2020). *Coronavirus: Lebanon declares state of emergency, orders two-week lockdown*. AlArabiya English.

DOI: <https://english.alarabiya.net/News/middle-east/2020/03/15/Coronavirus-Lebanon-to-close-airport-borders-ports-some-public-institutions>

² Sunniva, R. (April 3, 2020). *A night walk through Beirut under curfew*. The National News.

DOI: <https://www.thenationalnews.com/world/mena/a-night-walk-through-beirut-under-curfew-1.1000329>

³ Lewis, E. (March 24, 2020). *Lebanese taxi driver burns car after being fined in coronavirus lockdown*. AlArabiya English.

DOI: <https://english.alarabiya.net/News/middle-east/2020/03/24/Lebanese-taxi-driver-burns-car-after-being-fined-under-coronavirus-lockdown>

⁴ Reuters Staff. (July 27, 2020). *Lebanon imposes COVID-19 restrictions as infections spike*. Reuters. DOI: <https://www.reuters.com/article/us-health-coronavirus-lebanon/lebanon-reimposes-covid-19-restrictions-as-infections-spike-idUSKCN24S2FV>

⁵ Anonymous Interview.

⁶ The Daily Star. (October 2, 2020). *Lebanon enforces weeklong lockdown in 111 towns*. The Daily Star.

DOI: <https://www.dailystar.com.lb/News/Lebanon-News/2020/Oct-02/512567-lebanon-enforces-weeklong-lockdown-in-111-towns.ashx>

⁷ Syndicated content. (October 11, 2020). *The Latest: Lebanon orders lockdown for 169 towns, villages*. 9&10 News.

DOI: <https://www.9and10news.com/i/the-latest-lebanon-orders-lockdown-for-169-towns-villages-2/>

⁸ Note: All the decisions for the lockdowns, curfew are on the site of ministry of interior and municipalities/ number of cases on the site of MoPH

DOI: Ministry of Public Health <https://www.moph.gov.lb/en/Pages/2/194/surveillance-data#en/Pages/2/24870/novel-coronavirus-2019-Ministry-of-the-Interior-and-Municipalities>. DOI: <http://www.interior.gov.lb/Desicions.aspx>

⁹ Houssary, N. (November 9, 2020). *Lebanon heading for total lockdown as health sector buckles*. Arab News. DOI: <https://www.arabnews.com/node/1760751/middle-east>

¹⁰ *Lebanon lockdown possible if Covid-19 cases increase*. (December 27, 2020). Arab news.

DOI: <https://www.arabnews.com/node/1783441/middle-east>

cases and overcrowding in hospitals became even worse. Despite the increase in new cases and deaths, the government allowed bars and clubs to remain open as late as 3 am. After the holidays, Lebanon had the highest number of cases per million in the Arab world, where the number of active cases has increased eightfold in the last five months.¹¹ On January 6, Lebanon recorded an average of 4,166 new cases and 21 deaths daily, increasing the cumulative numbers to 199,925 cases and 1,537 related deaths.

On January 7, the government imposed a new lockdown, which was later extended to February 8. All businesses were shut down, including factories, banks, and government institutions, with the exception of essential sectors such as healthcare. Additionally, the government implemented a curfew from 5 pm to 6 am and created an online platform for people to request permission to leave their homes in case of an emergency.

By January 22, the cumulative number of cases in Lebanon had reached 272,411, including 2,357 cumulative cases amongst healthcare workers, and 2,218 associated deaths.

Political and Economic Background

As one interviewee noted, Lebanon was not simply facing Covid-19, but an “endemic outbreak in a multi-crisis complex,” which included the “socio-economic crisis, the devaluation of the Lebanese pound, and the protests.”¹² The Beirut explosion further complicated the Lebanese government’s response to the pandemic.

In October 2019, widespread protests erupted across the country after Lebanon announced a tax on WhatsApp calls. The tax was not the cause of the protest, but rather was perceived as another indication of the corruption of the political elite. Protestors demanded that the government, led by Prime Minister Saad Hariri, step down. On October 29, 2019, Hariri and his government resigned, but the ruling President Michel Aoun and the Speaker of the House, Nabih Berri, remained in power.¹³ Protests continued over the next couple of months. Then,

on December 19, President Aoun appointed Hassan Diab as prime minister, after consulting with various parties.¹⁴ Protests intensified after the announcement, but eventually Diab was able to form a government on January 22, 2020.¹⁵ The protests decreased in the wake of the formation of the government, but not necessarily as a result of it. The protests then resumed in April, August, and January 2021, which we will discuss in more detail later in the report.

Concurrently, the country is facing an economic crisis. In August 2019, the value of the Lebanese Pound (LBP) slowly started to decline. The unofficial exchange rate between the dollar and the LBP, officially pegged at 1 American dollar (USD) to LBP1,507.5 since 1997, reached a peak of around LBP8 thousand to USD1 on the black market in January 2021, and had reached similar heights in summer 2020.¹⁶ This rapid inflation, and Lebanon’s dependence on imports,¹⁷ has increased the poverty rate and unemployment,¹⁸ which had already risen prior to the full-fledged economic crisis. One and a half million Lebanese are considered vulnerable, with 28.5% considered poor (living on less than USD4 a day), and 300 thousand are considered extremely poor (living on USD2.4 a day and unable to meet their food needs).¹⁹

Additionally, the banks instituted capital controls, initially only allowing depositors to withdraw a couple of hundred dollars a week, and eventually forcing all depositors, even those with dollar accounts, to withdraw funds in Lebanese Pounds at a rate of 3,900. While depositors can receive dollars in new “fresh money” accounts, many people lost their savings and watched their salaries dwindle.²⁰

In addition to the increased political and economic pressure, on August 4, 2020, ammonium nitrate exploded in Beirut’s port, devastating the city, killing more than 200 people, and injuring more than 6,500.²¹ The fallout from the blast left nearby residents homeless and destroyed entire neighborhoods. Protests in Beirut followed the blast, even after Hassan Diab’s government resigned. Since August, Diab’s government had remained in their positions as “caretakers;” President Aoun appointed Mustapha Adiv, a former diplomat, on

¹¹ Lebanon leads the number of cases per million population in the Arab world as #COVID19 infections hit new records after the holiday season. (January 13, 2021). AUB Global Health Institute.

DOI: <https://www.facebook.com/watch/?ref=saved&v=448078892861831>

¹² Anonymous interview.

¹³ In Lebanon, the 1943 National Pact established a power-sharing agreement, which stated that a Maronite Christian would be the President, a Sunni Muslim the Prime Minister, and a Shia Muslim the Speaker of the House. In 1989, Lebanon signed the Taif Agreement prior to the end of the 15-year civil war. The agreement made the Sunni prime minister responsible to the legislature, instead of the president, and transferred some of the president’s previously held powers to the Council of Ministers. The agreement also stipulated that all the militias should abandon their weapons, but allowed militias in the south, including Hezbollah, to maintain their weapons because of Israeli occupation. After Hezbollah expelled the Israelis from the south in 2000, the militia built its political wing further.

¹⁴ Cornish, C. (December 19, 2019). *Hassan Diab appointed Lebanon PM with Hizbollah backing*. Financial Times.

DOI: <https://www.ft.com/content/3c687a1a-2281-11ea-b8a1-584213ee7b2b>

¹⁵ Azhari, T. (January 21, 2020). *Hassan Diab forms the 20-minister Cabinet*. Beirut Today. DOI: <https://beirut-today.com/2020/01/21/diab-lebanese-government/>

¹⁶ Lazkani, S. (February 2, 2021). *Lebanese Pound Starts February With Slight Rise After Record Low*. The961. DOI: <https://www.the961.com/lebanese-pound-rises-start-of-february/>

¹⁷ Blair, E. (September 17, 2020). *Explainer: Lebanon’s financial meltdown and how it happened*. Reuters.

DOI: <https://www.reuters.com/article/uk-lebanon-crisis-financial-explainer/explainer-lebanons-financial-meltdown-and-how-it-happened-idUKKBN268223>

¹⁸ El Hourri, W. (February 3, 2020). *Lebanon’s protesters want an end to incompetence, corruption and impunity*. openDemocracy. DOI: <https://www.opendemocracy.net/en/north-africa-west-asia/lebanons-protesters-want-an-end-to-incompetence-corruption-and-impunity/>

¹⁹ UNDP. (2016). *Rapid Poverty Assessment in Lebanon for 2016*. UNDP. DOI: http://www.lb.undp.org/content/lebanon/en/home/Response_to_the_Syrian_Crisis/successstories/Rapid-Poverty-Assessment-in-Lebanon-for-2016.html WHO. (2018). *Country cooperation strategy 2019-2023*: Lebanon. WHO Regional Office for the Eastern Mediterranean. DOI: <https://apps.who.int/iris/bitstream/handle/10665/279422/WHO-EM-PME-009-E-eng.pdf?ua=1>

²⁰ Hage Boutros, P. (July 26, 2020). *More Aggrieved than Ever by the Absence of Relevant Legislation*. L’Orient Today.

DOI: <https://today.lorientlejour.com/article/1227574/capital-controls-depositors-more-aggrieved-than-ever-by-the-absence-of-rel-levant-legislation.html>

²¹ Safi, M. et al. (November 12, 2020). *Beirut Blast: a night of horror, captured by its victims*. The Guardian.

DOI: <https://www.theguardian.com/world/ng-interactive/2020/nov/12/beirut-blast-a-night-of-horror-captured-by-its-victims>

September 1,²² but he could not form a government and resigned on September 22. Then, on October 22, Aoun appointed Saad Hariri, who, in January 2021, is still in the process of forming a government.²³ In addition to the political shakeup, the Beirut blast also had an immense impact on the country's infrastructure and public health system.

Public Health Overview

Prior to the outbreak of the Covid-19 pandemic Lebanon faced a number of public health challenges. As of 2018, non-communicable diseases (NCD) and injuries accounted for 96% of the deaths in Lebanon, and only 4% of deaths were related to communicable diseases and maternal, prenatal, and nutritional conditions.²⁴ However, the country's already fragmented healthcare system was ill equipped to deal with the impact of the pandemic and these challenges were compounded by the economic crisis and the Beirut explosion.

Lebanon's Healthcare System

The sector suffers because of an unregulated private sector, the absence of clear policy and strategy from the government regarding healthcare, high out-of-pocket expenditures, minimal public expenditure on primary care in comparison to secondary and tertiary care, lack of systematic data collection, and unavailability of data to major stakeholders.²⁵

After the civil war in Lebanon, the Ministry of Public Health (MoPH) was unable to provide medical services to citizens, which led to the unregulated development of private care, hi-tech private hospitals, and the purchase of private care by the MoPH and the national insurance scheme. Essentially, the MoPH pays the private hospitals for their services because it cannot provide many of these services through government hospitals. This has led to further self-regulation in the private sector and increased its dependence on public funds. Therefore, the private hospitals have more incentives to invest in technology to cover specialized services. On the one hand, these investments increased quality of care due to competition; on the other, they resulted in a lower quality of care in smaller and rural hospitals.

The 1962 legislation amended in 1983 set the legal framework for the MoPH to regulate the Lebanese hospital sector.²⁶ Because of the unregulated healthcare system, Article 7 of the amendment decree gave the MoPH the right to evaluate, classify, and accredit hospitals according to their status, field of specialty and range of services provided.²⁷

Because of this fragmentation, the MoPH, which theoretically has authority, lacks the information and resources to intervene effectively and act on errors and challenges. Although the MoPH, the Ministry of Social Affairs, and the Ministry of the Interior and Municipalities are responsible for primary healthcare activities²⁸ and the MoPH has authority over the healthcare system, the ministry's role has focused almost exclusively on service provision while its role in prevention, planning, and regulation remains limited.²⁹

The MoPH does play a role in covering the uninsured, but it contracts private hospitals without any selection criteria, which has negatively impacted the cost and quality of hospital care. The patient's share of out-of-pocket expenditure was 37.3% in 2012 and the health workforce density was 31.9 physicians and 29.3 nurses and midwives per 10,000 people in 2013.³⁰ Furthermore, private hospital owners have pursued profit without accounting for the quality of services provided or client satisfaction.³¹ In addition, the contracts are highly fragmented and rarely evaluated, leading to a surplus of specialists and services.³² Healthcare is financed in a number of ways: employers and employees who contribute to the National Social Security Fund (NSSF), private insurance, the MoPH, civil service cooperatives, and out-of-pocket spending,³³ which accounted for 33.5% of health expenditure in 2018.³⁴

Impact of the Economic Crisis and the Explosion on the Healthcare System

Both the economic crisis and the Beirut explosion have severely impacted the healthcare system's capacity because the government owes the hospitals money and many hospitals were damaged in the wake of the blast. Additionally, the economic crisis has led to lower salaries for medical employees as well as limited access to medical supplies and personal protective equipment (PPE).

²² Chehayeb, K. (September 1, 2020). *Who is Mustapha Adib, Lebanon's new prime minister*. Middle East Eye. DOI: <https://www.middleeasteye.net/news/lebanon-prime-minister-who-is-mustapha-adib>

²³ Qiblawi, T. (October 22, 2020). *Protesters wanted change but Lebanon's elite picks veteran Saad Hariri to lead crisis wracked country*. CNN. DOI: <https://edition.cnn.com/2020/10/22/middleeast/saad-hariri-prime-minister-lebanon-intl/index.html>

²⁴ WHO. (2018). *Non-Communicable Diseases Country Profiles: Lebanon*. DOI: https://www.who.int/nmh/countries/2018/lbn_en.pdf?ua=1

²⁵ Sfeir, R. (2007). *Strategy for national health care reform in Lebanon*. Beirut: Ministry of Public Health.

²⁶ Van Lerberghe, W., Ammar, W., El Rashidi, R., Sales, A., & Mechbal, A. (1997). Reform follows failure: I. Unregulated private care in Lebanon. *Health policy and planning*, 12(4), 296-311

²⁷ Ammar, W., Wakim, R., & Hajj, I. (2007). Accreditation of hospitals in Lebanon: a challenging experience.

²⁸ WHO. (2018). *Country cooperation strategy 2019-2023: Lebanon*. WHO Regional Office for the Eastern Mediterranean DOI: <https://apps.who.int/iris/bitstream/handle/10665/279422/WHO-EM-PME-009-E-eng.pdf?ua=1>

²⁹ Salti, N., Chaaban, J., & Raad, F. (2010). *Health equity in Lebanon: a microeconomic analysis*. International Journal for Equity in Health, 9(1), 1-21.

³⁰ WHO. (2015). *Country health profile: Lebanon*. WHO Regional Office for the Eastern Mediterranean DOI: https://applications.emro.who.int/dsaf/EMROPUB_2016_EN_19274.pdf?ua=1

³¹ Ammar, W., Wakim, R., & Hajj, I. (2007). Accreditation of hospitals in Lebanon: a challenging experience.

³² Siddiqi, S., Masud, T. I., & Sabri, B. (2006). Contracting but not without caution: experience with outsourcing of health services in countries of the Eastern Mediterranean Region. *Bulletin of the World Health Organization*, 84, 867-875.

³³ Ammar, W. (2009). *Health Beyond Politics. Health System Financing*. Chapter 3. DOI: <https://www.moph.gov.lb/userfiles/files/Publications/HealthBeyondPolitics/Chapter3-HealthSystemFinancing.pdf>

³⁴ The World Bank. (2018). Out-of-pocket expenditure (% of current health expenditure) - Lebanon. The World Bank. DOI: <https://data.worldbank.org/indicator/SH.XPD.OOPC.CH.ZS?locations=LB>

Lebanon has 121 private hospitals with 12,578 beds and 32 public hospitals with 2,653 beds – a split of roughly 5:1 private to public. The government owes hospitals USD1.3 billion.³⁵ In addition, the hospitals are suffering from a deficit of supplies due to inflation.³⁶ As a result, many hospitals did not open units for Covid-19 patients, or waited until the crisis had already progressed, and refused to admit patients who they thought would not be able to cover hospitalization costs.³⁷ For example, on January 28, 2021, Health Minister Hamad Hassan referred the St. Therese and Kabr Chmoun hospitals to the Office of the Public Prosecutor because they refused to treat a Covid-19 patient in cardiac arrest, who subsequently died. Kabr Chmoun hospital also refused to admit a cancer patient suspected of having Covid-19.³⁸

The Beirut explosion not only damaged many hospitals, it overwhelmed them with more than 6 thousand people injured in the blast. Immediately after the explosion, 55 health centers in Beirut were temporarily out of service, approximately 50% of the total healthcare system.^{39 40} The Beirut blast damaged at least four of the major hospitals in Beirut, meaning that more than 600 beds were rendered unavailable.⁴¹ After the blast, Covid-19 precautions, such as wearing masks and social distancing, were not a priority as medical facilities struggled with overcrowding.⁴² The Covid-19 crisis had already placed more stress on the hospitals, but the impact of the explosion amplified it significantly.

As the economic crisis has worsened, hospitals are suffering and unable to provide adequate services. In January 2021, as the country reaches its highest number of daily cases, hospitals cannot admit even the most critical cases. Patients are asked to treat themselves at home and are advised to rent oxygen machines and buy medications

from pharmacies.^{43, 44} Moreover, the medical staff is exhausted as over 500 of 14 thousand Lebanese doctors have left the country, and the hospitals lack the capacity to train health workers and send them to the frontline.⁴⁵ Sleiman Haroun, the head of the Syndicate of Private Hospitals, said that the 50 private hospitals receiving Covid-19 patients in Lebanon had reached their full capacity (850 beds, including 300 ICU beds). He said that patients were waiting in lines, and some patients may need more than three weeks in an ICU.⁴⁶ Deputy Fadi Allama, the owner of the Sahel hospital in the suburbs of Beirut, said that hospitals in Lebanon were not able to isolate Covid-19 patients due to infrastructure issues.⁴⁷

There is also a shortage of medicine and medical supplies due to the deteriorating economic situation and the inability to import supplies. The government owes the state and private hospitals large amounts of money. For example, the state owes the Rafik Hariri University Hospital (RHUH), which is Lebanon's largest Covid-19 treatment center, around LBP20 billion (USD13.3 million at the official exchange rate and around USD2.5 million at the black market rate). In addition, according to Sleiman Haroun, the government owes private hospitals USD1.6 billion at the official exchange rate, or USD300 million at the black market rate. Haroun added that the 120 private hospitals did not receive money from the additional LBP450 million credit line in the 2020 budget, which was allocated to hospitals in April.⁴⁸

International donors have also supported the Lebanese healthcare system, but in some cases, their money has not reached hospitals in need. The World Bank allotted USD40 million to help Lebanon respond to the Covid-19 pandemic and to protect healthcare workers. Dr. Abiad, chief of RHUH, said that his hospital had still not received

35 Staff Agencies. (2020). *Lebanon: Lebanese Private Hospitals Close Doors for One Day Strike Over Gov't Nonpayment*. Al Ahed News. DOI: <https://www.english.alahednews.com.lb/50528/385>

36 Shelton, T. (August 15, 2020). *Beirut's blast leaves hospitals damaged or destroyed as coronavirus numbers soar*. ABC News. DOI: <https://www.abc.net.au/news/2020-08-16/coronavirus-outbreak-hits-beirut-after-deadly-blast-lebanon/12561742>

37 Baaklini, S. (July 29, 2020). *Lebanon's Health Sector at Risk of Being Overwhelmed Very Quickly*. L'Orient Today. DOI: <https://today.lorientlejour.com/article/1227714/lebanons-health-sector-at-risk-of-being-overwhelmed-very-quickly.html>

38 Lebanese Ministry of Public Health. (2021). *Minister Hasan Refers St. Therese and Kabr Chmoun Hospitals to Public Prosecution and Decides to Close a Medical Lab*. MoPH. DOI: <https://www.moph.gov.lb/en/Media/news#/en/Media/view/45832/minister-hasan-sttherese-and-kabr-chmoun-hospitals-public-prosecution>

39 France 24. (August 13, 2020). *Many of Beirut's hospitals "non-functional" following deadly blast, WHO warns*. France 24. DOI: <https://www.france24.com/en/20200813-half-of-beirut-s-hospitals-not-functioning-following-last-week-s-deadly-blast>

40 Reuters staff. (August 18, 2020). *Lebanon orders two-week shutdown after Covid-19 surge*. Reuters. DOI: <https://www.reuters.com/article/us-health-coronavirus-lebanon-shutdown/lebanon-orders-two-week-shutdown-after-covid-19-surge-idUSKCN25E2CI>

41 Loveluck, L. et al. (August 12, 2020). *Half of Beirut's health-care centers are out of commission after the explosion*. The Washington Post. DOI: https://www.washingtonpost.com/world/half-of-beiruts-health-care-centers-are-out-of-commission-after-the-explosion/2020/08/12/8e52b552-dca8-11ea-b4f1-25b762cddb4f_story.html

42 Shelton, T. (August 15, 2020). *Beirut's blast leaves hospitals damaged or destroyed as coronavirus numbers soar*. ABC News. DOI: <https://www.abc.net.au/news/2020-08-16/coronavirus-outbreak-hits-beirut-after-deadly-blast-lebanon/12561742>

43 Lebanon Files. (January 23, 2021). *Citizen homes, mini hospital... the Lebanese are at "the last breath"*. Lebanon Files. DOI: <https://www.lebanonfiles.com/articles/%d8%a3%d8%ae%d8%a8%d8%a7%d8%b1-%d9%85%d8%ad%d9%84%d9%8a%d9%91%d8%a9/%d9%85%d9%86%d8%a7%d8%b2%d9%84-%d8%a7%d9%84%d9%85%d9%88%d8%a7%d8%b7%d9%86%d9%8a%d9%86-mini-%d9%85%d8%b3%d8%aa%d8%b4%d9%81%d9%89-%d8%a7%d9%84%d9%84%d8%a8%d9%86%d8%a7%d9%86%d9%8a%d9%86-%d8%b9/?fbclid=IwAR0lDwYvsDws-Nk8MT2-kt8YgFepeO6sBi9-Vw6pNYpOHw5-71lRtKsGKrs>

44 Gerges, L. (January 21, 2021). *Plan B of Lebanon Emergency Plan, treating patients in homes and in private centers*. AlNahhar. DOI: <https://www.annahar.com/arabic/section/5-%D8%B5%D8%AD%D8%A9/24012021022737486?fbclid=IwAR109SDw4xSckL4024Qb-KxWvRWMepqhx84--4mHLVgVfH93JpdFzZkde8>

45 Yazbeck, C. (January 20, 2021). *Lebanon opened up for the holidays to help its economy. Hospitals are now filled with COVID-19 patients*. ABC News. DOI: <https://www.abc.net.au/news/2021-01-21/lebanon-hospitals-on-brink-of-collapse-due-to-covid/13070072>

46 AFP. (January 2, 2021). *Coronavirus: Medics in Lebanon warn of COVID-19 hospital situation*. Alarabiya. DOI: <https://english.alarabiya.net/en/coronavirus/2021/01/02/Coronavirus-Medics-in-Lebanon-warn-of-COVID-19-hospital-situation>

47 Talis, H. (November 3, 2020). *Hospitals in Lebanon close their doors to patients ... the Italian Corona scenario or worse*. Alhurra. DOI: <https://www.alhurra.com/lebanon/2020/11/03/%D9%85%D8%B3%D8%AA%D8%B4%D9%81%D9%8A%D8%A7%D8%AA-%D9%81%D9%8A-%D9%84%D8%A8%D9%86%D8%A7%D9%86-%D8%AA%D9%8F%D8%BA%D9%84%D9%82-%D8%A3%D8%A8%D9%88%D8%A7%D8%A8%D9%87%D8%A7-%D8%A3%D9%85%D8%A7%D9%85-%D8%A7%D9%84%D9%85%D8%B1%D8%B6%D9%89-%D8%B3%D9%8A%D9%86%D8%A7%D8%B1%D9%8A%D9%88-%D9%83%D9%88%D8%B1%D9%88%D9%86%D8%A7-%D8%A7%D9%84%D8%A5%D9%8A%D8%B7%D8%A7%D9%84%D9%8A-%D8%A3%D8%B3%D9%88%D8%A3>

48 Human Rights Watch. (December 10, 2020). *Lebanon: Health Workers' Safety Neglected during Covid-19*. Relief Web. DOI: <https://reliefweb.int/report/lebanon/lebanon-health-workers-safety-neglected-during-covid-19>

any money from this loan. In addition, Dr. Ghanem, the chief medical officer of the LAU Medical Center-Rizk Hospital, said that they had not received any explanation of how this money was being spent.⁴⁹

Moreover, hospital officials reported that the necessary PPE was no longer subsidized by the state as it had been in the early stages of the pandemic, and that now their prices are affected by the dollar rate on the black market. Dr. Ghanem and Dr. Abiad told Human Rights Watch that hospitals in Lebanon were allocated a huge donation of PPE on August 4; however, this assistance did not reach the hospitals. Due to a number of factors, including the migration of doctors and nurses, Mirna Doumit, the head of the Syndicate of Nurses, said that on average one nurse cares for 20 patients, while the ratio should be 1:8.⁵⁰ In addition to being overworked, the depreciation of the LBP has left healthcare workers underpaid. Historically, doctors' consultation fees were between LBP100 thousand to LBP150 thousand (USD67 to USD100 at the official rate, USD12-19 at the black market rate) and nurses' salaries were around LBP1 million per month (USD667 at the official rate, USD125 at the black market rate).⁵¹

Also, healthcare workers suffered attacks as the hospitals were not able to admit new patients. In an interview with Human Rights Watch, Sharaf Abou Sharaf, the head of the doctors' syndicate, estimated "that there is at least one serious attack on a doctor every month, amid 'judicial laxity' in holding the attackers – often people with 'political backing' – accountable."⁵² All of these factors exacerbated the health situation in Lebanon.

Vaccine Rollout

Lebanon plans to begin its vaccine rollout in February, with the first batch coming from Pfizer. Assem Araji, the MP who heads the parliamentary health committee, anticipates that the vaccines will cost USD18 a dose, a price that reflects Lebanon's economic problems. The USD27 million deal would secure 1.5 million vaccines while the country negotiates to receive an additional 2 million. Araji told The Associated Press that the government would pay a USD4 million deposit, and aims to pay the rest with a World Bank loan for pandemic-related expenses.⁵³

Lebanon has also signed up for another 1.5 million vaccines with

COVAX, the World Health Organization-led partnership with humanitarian organizations that aims to provide vaccines for up to 20% of the population of poor countries hit hard by the pandemic. Lebanon has deposited USD4.3 million to secure the COVAX vaccines, Araji said.

Both vaccines would be offered free of charge in Lebanon.⁵⁴ On the other hand, the government did not provide details about its vaccination strategy, raising concerns about its ability to provide vaccines due to the country's economic and governance crisis.⁵⁵

On January 28, 2021, the Ministry of Public Health, in coordination with other agencies, launched the online platform <https://covax.moph.gov.lb> for vaccine registration.⁵⁶ According to LBC News, there were 203,000 online requests for the vaccine by January 31, not including requests from the healthcare workers.⁵⁷

Refugees' Access to Healthcare

Lebanon has the highest number of refugees per capita in the world, with more than 1.5 million refugees in the country.⁵⁸ According to the WHO, 87% of refugees are concentrated in the same areas where the most impoverished Lebanese citizens (67%) live. By 2017, 76% of displaced Syrians were living below the poverty line, on less than USD4 per day. Lebanon has a high percentage of NCD, and with the influx of refugees Lebanon is suffering from an increase in communicable diseases.⁵⁹

The fragmented healthcare system makes the availability of and access to healthcare by refugees difficult. MoPH, UNHCR and NGOs are collaborating to ensure access to healthcare through mobile units, subsidized treatment, and primary healthcare centers. In addition, medications and vaccinations are often free and available.⁶⁰

Lebanon's Path towards a Contact Tracing Application

In July 2020, as the number of cases started to increase, Lebanon announced the launch of Ma3an - Together Against Corona, a contact tracing app.⁶¹ Because of the explosion and issues with the Google Play

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Arab News. (December 28, 2020). *Lebanon reserving nearly 2 million coronavirus vaccines*. Arab News. DOI: <https://www.arabnews.com/node/1784051/middle-east>

⁵⁴ Ibid.

⁵⁵ Abi-Rashed & Salameh, P. (January 15, 2021). *Covid-19 Vaccination in the Time of Austerity: How and for Whom?* Arab Reform Initiative. DOI: <https://www.arab-reform.net/publication/covid-19-vaccination-in-the-time-of-austerity-how-and-for-whom/>

⁵⁶ Houssari, N. (January 29, 2021). *Lebanon launches online platform for vaccine registration*. Arab news. DOI: <https://www.arabnews.com/node/1800166/middle-east>

⁵⁷ LBCI Group. (February 3, 2021). *Low numbers registered for vaccination on the platform. What are the causes?* LBCI Group. DOI: <https://www.lbcigroup.tv/news/coronavirus/574049/%D8%A3%D8%B1%D9%82%D8%A7%D9%85-%D8%AE%D8%AC%D9%88%D9%84%D8%A9-%D8%B3%D8%AC%D9%84%D8%AA%D9%87%D8%A7-%D9%85%D9%86%D8%B5%D8%A9-%D8%A7%D9%84%D8%AA%D9%84%D9%82%D9%8A%D8%AD-%D9%81%D9%85%D8%A7-%D8%A7%D9%84%D8%A3%D8%B3%D8%A8-%D9%88%D9%83%D9%8A%D9%81-%D9%8A/ar>

⁵⁸ UNHCR. (2020). *Lebanon fact sheet*. UNHCR. DOI: <https://www.unhcr.org/lb/wp-content/uploads/sites/16/2020/02/UNHCR-Lebanon-Operational-Fact-sheet-January-2020.pdf>

⁵⁹ WHO. (2018). *Country cooperation strategy 2019-2023: Lebanon*. WHO Regional Office for the Eastern Mediterranean. DOI: <https://apps.who.int/iris/bitstream/handle/10665/279422/WHO-EM-PME-009-E-eng.pdf?ua=1>

⁶⁰ Hanna-Amodio, C. (March 12, 2020). *Syrian refugee access to health care in Lebanon*. Relief Web. DOI: <https://reliefweb.int/report/lebanon/syrian-refugee-access-healthcare-lebanon>

⁶¹ Newsom, N. (July 16, 2020). *Lebanon launches COVID-19 contact tracing app*. The Daily Star. DOI: <https://www.dailystar.com.lb/News/Lebanon-News/2020/Jul-16/509069-lebanon-launches-covid-19-contact-tracing-app.ashx>

and Apple App Store, the app was not released until the beginning of September, when it was launched in the beta phase.⁶² As of January, the app has over 50 thousand downloads in the Google Play Store.

The app was developed by a collaborative team from the Faculty of Health and Sciences at the American University of Beirut (AUB), the Humanitarian Engineering Initiative at AUB, the Ministry of Public Health, and Lebanese mobile developer TEDMOB. According to Professor Aline Germani, the collaboration came together as a result of the AUB Engineering Initiative's close relationship with the MoPH and the mutual desire to build a tool to help slow the spread of the pandemic.⁶³ Within the MoPH, the Epidemiological Surveillance Unit (ESU), the Directorate General, the E-health department, and the communicable diseases department collaborated to work on this app. The team followed World Health Application Standards when developing the app.⁶⁴

Ma3an was not the first electronic tool the government had launched in response to the pandemic, but it was the first contact tracing app. At the outset of Covid-19, the Ministry of Public Health launched or repurposed several tools to help people identify Covid-19 symptoms, but they did not immediately launch a contact tracing app. When the government reopened the airport in July 2020, the Ministry of Public Health launched an online survey for incoming travelers.⁶⁵ The survey collects a range of data, including information traditionally found in users' passports.

Ma3an relies on Bluetooth and the Bluetooth Administration Permission to inform users when they have come in close contact with someone who has tested positive for Covid-19.⁶⁶ Once a close contact is identified, a random number is generated to track the contact. The app uses a "risk model" that accounts for different factors to judge whether the contact was significant.⁶⁷ If a user tests positive, the Epidemiological Surveillance Unit at the Ministry of Public Health sends the information to the app, which asks the user for their consent to upload or download their "contact data", which has been collected through Bluetooth. Users can also choose to upload their own positive tests. The app will then inform any other users who have created "contact data" with the user who tested positive.⁶⁸

Recent reviews on the Google Play Store demonstrate that the app still has some functional issues, as users have complained about the broken SMS verification function.⁶⁹ We will explore the privacy measures the app takes in the section on social control.

⁶² Interview with Dr. Aline Germani, Dr. Imad El-Hajj, and Dr. Marco Bardus, September 16, 2020.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Covid 19 MOPH Pass. DOI: <https://survey123.arcgis.com/share/988ba32e1b634902ba3b14c3e4f1614d>

⁶⁶ SMEX. (September 11, 2020). *Security Concerns with Lebanon's New Contact Tracing App*. Smex website. DOI: <https://smex.org/security-concerns-with-lebanons-new-contact-tracing-app/>

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Ma3an - Together Against Corona. Google Play Store. DOI: https://play.google.com/store/apps/details?id=com.tedmob.moph.tracer&hl=en_US&gl=US&showAllReviews=true

Assessing the Public Health Response

The government's inability to develop a long-term strategy once the country lockdown measures were loosened and the airport was reopened on July 1, 2020 meant that the Covid-19 crisis could not be contained. Cases began to climb, even though the government had managed to increase hospital capacity. Whether or not the government had developed a strategy, the impact of the economic crisis and the Beirut explosion further compounded the issue, leaving people more vulnerable and the healthcare system overwhelmed. This lack of planning also set the stage for the government's catastrophic decision to reopen the country over the holiday season in December 2020. Moreover, issues with data collection related to testing and emergency aid also stymied the government's efforts to respond to the pandemic effectively. The introduction of the Ma3an contact tracing app in September was an insignificant contribution to the country's ability to prevent the spread of the virus, largely due to poor publicity. While the government could have developed a more effective strategy, the impact of the economic crisis and the Beirut blast also made it much more difficult to deal with the pandemic.

A number of the public health experts we interviewed noted that the government was able to increase the capacity of the hospitals during the initial lockdown stage, but did not build a comprehensive strategy to address the pandemic and deal with travelers arriving in Lebanon. Sara Chang, an independent public health professional, mentioned that the government had tried different tactics "here and there," but had not built a "holistic approach," emphasizing that "there were no policies and practices in place to ensure that the growth would continue to be slowed."⁷⁰ Similarly, Jade Khalife, a public health expert associated with the #NoCovidLB campaign, said that while the government's initial measures were admirable, they did not take "the long term measures that were necessary to contain the virus" into consideration, stressing the lack of a "national strategy."⁷¹

The rise in cases coincided with the reopening of the airport. Khalife specifically criticized the government's inability to impose lockdown and quarantine restrictions on travelers entering the country. While there are no conclusive data on the number of cases that originated via travel, there have been numerous reports about individuals who attended weddings or funerals upon their arrival, and in turn infected other attendees with the virus. For example, Ankoun village issued a ticket against one of the residents who returned during the pandemic because he did not self-quarantine and visited friends and relatives.⁷² In addition, in Kernayel village, one traveler arrived and the municipality was not informed by MoPH about his positive result

in order to take the required measures. This traveler then infected at least 17 people.⁷³

The government also failed to expand the capacity of the Epidemiological Surveillance Unit effectively. While the government was able to increase the capacity of the hospitals to deal with a surge in cases, it was not able to support a similar capacity increase in the ESU.⁷⁴ Of course, the government is strapped for resources as the economic crisis worsens, but the inability to increase capacity hindered the initially successful contact tracing efforts.

This lack of strategy left Lebanon with no other means to control the spread of the virus except to impose a lockdown, according to Khalife.⁷⁵ Again, the government's response did not exist in a vacuum; during the lockdown, the value of the Lebanese Pound continued to plummet, reaching new lows in July. Then, on August 4 the explosion further derailed the government's efforts to contain the virus and would have impacted any national strategy that had been developed, especially with the reduced capacities of damaged hospitals. The explosion accelerated the spread of cases, but they had already slipped out of control prior to August 4.

Evaluating the Lockdown: Early Success Belies Lack of Strategy

The initial four-stage lockdown, which lasted through June, was relatively successful in controlling the spread of the pandemic, but the subsequent partial lockdowns highlighted the government's lack of strategy. One interviewee described the initial lockdown as "very well managed."⁷⁶ A number of interviewees highlighted the decisions to close schools and subsequently close the airport as critical to flattening the curve.⁷⁷ Moreover, beyond the more stringent measures, one interviewee also stressed that the community outreach and communication was more effective over the first four months as well.⁷⁸ Despite these early successes, the government continued to allow flights to and from Iran and Italy even as they emerged as pandemic hotspots.⁷⁹

The second phase of the lockdown, which occurred after the reopening of the airport and the Beirut explosion, was much less successful. While it is harder to gauge the efficacy of the lockdowns that occurred immediately before and after the Beirut blast, the partial lockdowns throughout September were unevenly applied and ineffective. In September, the government instituted a partial

⁷⁰ Interview with Sara Chang, October 22, 2020.

⁷¹ Interview with Jade Khalife, October 14, 2020.

⁷² Almanar. (July 28, 2020). Anqoun municipality: *An arrest report against a foreigner who did not quarantine himself due to corona*. Almanar website. DOI: <https://almanar.com.lb/7015197>

⁷³ An-Nahar. (July 19, 2020). *A newcomer had contact with 33 people in Qornayel before knowing that he had been infected: The town is closed for 3 days*. DOI: <https://www.annahar.com/arabic/article/1237415-%D9%88%D8%A7%D9%81%D8%AF-%D8%A7%D8%AD%D8%AA%D9%83-%D8%A833-%D8%B4%D8%AE%D8%B5%D8%A7-%D9%81%D9%8A-%D9%82%D8%B1%D9%86%D8%A7%D9%8A%D9%84-%D9%82%D8%A8%D9%84-%D8%A3%D9%86-%D9%8A%D8%B9%D8%B1%D9%81%D8%B1%D9%81-%D8%A8%D8%A5%D8%B5%D8%A7%D8%A8%D8%AA%D9%87-%D8%A7%D9%84%D8%A3%D8%B9%D9%88%D8%B1-%D9%84%D8%A7%D9%84%D9%86%D9%87%D8%A7%D8%B1-%D8%A5%D9%82%D9%81%D8%A7%D9%84-%D8%A7%D9%84%D8%A8%D9%84%D8%AF%D8%A9-3>

⁷⁴ Anonymous interview.

⁷⁵ Interview with Khalife.

⁷⁶ Anonymous interview.

⁷⁷ Interview with Khalife & Interview with Chang.

⁷⁸ Anonymous interviewee.

⁷⁹ Mehdhy, H. (November 30, 2020). *Too Little Too Late: A Timeline of Lebanon's Response to COVID-19*. The Public Source. DOI: https://www.clockwisemd.com/hospitals/823/visits/new?_ga=2.191043882.1671144698.1612380120-694136353.1612380120.

lockdown initially covering 111 towns, which was not properly enforced by the municipalities, and there were problems with data collection. Most municipalities did not have enough human resources to make the closure of shops compulsory. For example, a town with 10 thousand inhabitants might have only two municipal officers.⁸⁰ As Jade Khalife noted, “At the moment, the center does not have the capacity to enforce a national lockdown. They can only do that in Beirut and some urban areas.”⁸¹ Therefore, local governments did not actually enforce the lockdown in many cases.

Moreover, the economic situation had deteriorated significantly and pushed more people below the poverty line. Many towns are home to large families and the municipalities could not force people to stop working and stay at home when lockdown threatened their livelihoods.⁸² The government had provided insufficient aid to cover the 111-town lockdown, giving no additional benefits to residents of these towns.⁸³ The distribution of aid was already plagued with delivery issues, which we explore later, and the government’s inability to provide additional relief to residents of these communities exacerbated the existing problems.

The decision to ease the lockdown restrictions over the holidays at the end of 2020 was particularly controversial and led to a sharp increase in cases in January 2021. A report from *Le Orient Today*, an English-language daily, demonstrated how the government caved to the demands of the Syndicate of Owners of Restaurants, Cafes, Nightclubs and Patisseries to open restaurants and nightlife during the holidays.⁸⁴ Essentially, the government prioritized a short-term economic boon over public health as Lebanon hit record highs in Covid-19 cases and related deaths in January.

The decision was also criticized by experts and citizens on social media. The President of Lebanon’s Socio-Economic Council, Charles Arbid, said that “the lack of procedures and overcrowding will lead to disaster if people do not act consciously.” Petra Khoury, health advisor to the caretaker prime minister, said: “It’s about the resiliency we’re going to need to get through the next two weeks. Like many of you, I miss my larger family and friends’ joyful company during this season. The best gift we can give our loved ones is distance and space. Unfortunately, unless we all comply, we shall be facing some rough times.” Mr. Halim Shebaya, the director of the Arab Association for Constitutional Law, responded to Khoury: “Adviser to the prime minister giving sensible advice while the government is loosening restrictions during the holidays despite the risks involved. An example of sound advice coupled with an opposite policy implemented with no sense of contradiction. Welcome to Lebanon.”⁸⁵

These statements demonstrate that a number of experts, including individuals responsible for advising the government, realized that this was a bad idea.

Because of the lack of strategy and the decision to open the country, on January 14 the government eventually had to implement a full lockdown, which it had resisted throughout the fall of 2020. The government’s inability to develop a strategy and take necessary steps to stop the spread of the pandemic at the end of the year caused a sharp increase in cases that have left hospitals at full capacity.

In addition, a video shared on social media and television showed the caretaker minister of agriculture Abbas Mortada offering condolences in South Lebanon, breaching the full lockdown and the decision to ban funerals and social gatherings.⁸⁶

Data Management Issues

The partial lockdown strategy was also built on faulty data management, which also impacted the government’s ability to handle contact tracing and aid delivery.

Inaccurate Testing Data

Many towns and villages were included in the September 2020 partial lockdown due to the high number of cases; however, the data provided by the government was inaccurate. The lack of standardized data collection, a high rate of false positives, and delays in reporting results eroded trust in the MoPH and negatively impacted the government’s ability to contain the pandemic.

The lack of effective coordination around sharing data created problems for stakeholders and policy makers, hindering them from making good decisions.⁸⁷ Because the MoPH and the Ministry of the Interior and Municipalities (MoIM) use different systems, and the data is often sourced from different ministries, there are discrepancies. The MoPH system collects the place of birth on the ID, and IMPACT, the MoIM system, collects the place of residency. The Inter-Ministerial Platform for Assessment, Coordination and Tracking (IMPACT) is a platform for assessment, coordination, and follow-up that is managed by the Central Inspection Board and private companies; it is used by the Ministry of the Interior and Municipalities along with multiple stakeholders, including municipalities, for information management and sharing.⁸⁸

⁸⁰ Health center near Chtaura.

⁸¹ Interview with Jade Khalife.

⁸² Interviews at health centers (near Chtaura and near Zahle).

⁸³ Health centers (near Chtaura and near Syrian border).

⁸⁴ Szakola, A. (January 29, 2021). *How private interests lobbied officials to sign off on a holiday nightlife scene ripe for the spread of COVID-19*. *L’Orient Today*. DOI: <https://today.lorientjour.com/article/1249852/how-private-interests-lobbied-sympathetic-officials-to-sign-off-on-a-holiday-nightlife-scene-ripe-for-the-rampant-spread-of-covid-19.html>

⁸⁵ Taha, R. (December 20, 2020). *Lebanon eases COVID-19 restrictions during holidays despite rise in critical cases*. *Al Arabiya*. DOI: <https://english.alarabiya.net/en/coronavirus/2020/12/20/Coronavirus-Lebanon-eases-COVID-19-restrictions-during-holidays-despite-rise-in-critical-cases>

⁸⁶ Lebanon Files. (January 24, 2021). *In the video... a minister breaks the general closure decision and takes part in a massive mourning!* Lebanon Files. DOI: <https://www.lebanonfiles.com/articles/%d8%a3%d8%ae%d8%a8%d8%a7%d8%b1-%d9%85%d8%ad%d9%84%d9%8a%d9%91%d8%a9/%d8%a8%d8%a7%d9%84%d9%81%d9%8a%d8%af%d9%8a%d9%88-%d9%88%d8%b2%d9%8a%d8%b1-%d9%8a%d9%83%d8%b3%d8%b1-%d9%82%d8%b1%d8%a7%d8%b1-%d8%a7%d9%84%d8%a7%d9%82%d9%81%d8%a7%d9%84-%d8%a7%d9%84%d8%b9%d8%a7%d9%85/?fbclid=IwAR2BtAnwHZH5Au1WgEMRyZZx0GRophlDZ11CFBdVapSQuPdMIeQx-yM-12w>

⁸⁷ Anonymous interview.

⁸⁸ CIB. (2020). *Impact Lebanon*. DOI: <https://impact.cib.gov.lb/home/about>

This unstandardized collection of data caused problems when selecting towns to be locked down. For example, if someone tested positive for Covid-19 in Beirut, the lab or hospital could report to the MoPH that the case is from Zahle, a district to the east of Beirut, because this is the information on the person's ID. Then, the MoPH will report to the MoIM that there is a case in Zahle, and the municipality of Zahle will receive the notification although the patient is living in Beirut. In addition, many municipalities, including Machghara, Zalka,⁸⁹ and Rmeileh,⁹⁰ refused to implement the partial lockdown, stating they did not have as many cases as the ministries claimed. Therefore, stakeholders accessed data that often lacked the correct geographical area, age groups, and context on where and how the infection was spreading.⁹¹

The MoPH also reported redundant positives, or false positives. Of course, given the current methods of testing, false positives are a reality, but the system did not work to limit this phenomenon. In some cases, if army personnel tested positive, they had to follow a certain protocol, which includes testing every couple of days. According to one interviewee, each positive test from an army member counted as an additional case.⁹² Similarly, one interviewee claimed that if an employee in the public sector tested positive, the MoPH considered the whole section as positive.⁹³ Additionally, the quality of some of the public tests came under scrutiny. Many people claimed that they had never had a PCR test but were notified that they had tested positive. Others claimed that they tested positive on the first test, but when they repeated the test in a private lab, the result was negative.⁹⁴ The #ZeroCovidLB campaign specifically highlighted the tests administered outside of Beirut, as there were limited data around procurement.⁹⁵ As a result, the MoPH lost some of its credibility concerning test results.

Delays in reporting test results to individuals and municipalities further eroded trust in the MoPH. Earlier in the pandemic, results from tests conducted by the Epidemiological Surveillance Unit took up to ten days in some cases.⁹⁶ Additionally, the MoPH also takes a long time to report positive cases to the municipalities, despite the IMPACT platform.⁹⁷ The delay in results led to further skepticism around testing and data, and more rumors. For example, one rumor accused the MoPH of paying money to people if they claimed they had tested positive. Interviewees, who pointed out other flaws in the system, asserted that these rumors were not true.⁹⁸ However, the

data irregularities fueled the distrust that helped produce them. In a recent case, a journalist tweeted that her family member died from cancer; however, the hospital refused to give the body back to the family unless they signed a paper declaring that the patient died from Covid-19 so the hospital would be able to get LBP10 million from the government. The journalist accused the government of exaggerating the number of deaths from Covid-19.⁹⁹

Impact on Contact Tracing

As the number of cases increased, the government struggled to contact trace effectively, due to poor data management and an overburdening of the system. One interviewee, who works in public health and wished to remain anonymous, said that while the public health system was able to withstand the increase in the number of cases, the Epidemiological Surveillance Unit could not cope.¹⁰⁰ The interviewee cited a reluctance to share data with relevant organizations as one of the key reasons. Moreover, the MoPH and municipalities were tracking the contact tracing data through their own DHIS system, while the Ministry of the Interior and Municipalities relied on the IMPACT system.

The two systems are built on different software and contain discrepancies, according to the interviewee.¹⁰¹ IMPACT is currently used to track Covid-19 cases, but initially it was used to track travelers entering the country. Employees at the airport enter the patient's data, such as name, age, and place of residence in Lebanon, and the municipality can access the data. Later, when the number of cases increased, municipalities had to enter the data of the patient and the people who had been in contact with the patient, their test results, and the duration of quarantine. Municipalities could then send the contacts to the epidemiological surveillance unit in the region so that they could be tested.¹⁰² The issues with data collection, management, and sharing impeded the ability of the ESU and other actors to contact trace effectively.

Impact on Aid Distribution

The government also provided insufficient aid throughout the pandemic, and this was exacerbated by faulty data and poor implementation. The aid distribution process excluded families who should have qualified for government assistance. In April, the government announced a plan to give families LBP400 thousand

⁸⁹ Albawaba News. (October 2, 2020). *In the video...Closing of 111 Lebanese towns due to Corona*. Albawaba News. DOI: <https://www.albawabnews.com/4151854>

⁹⁰ <https://almanar.com.lb/7312417>

⁹¹ Interview with Jade Khalife and anonymous interview.

⁹² Mekse interview.

⁹³ Ibid.

⁹⁴ Interview with representatives from health centers (near Zahle, Syrian border, and Chtaura), November 2020.

⁹⁵ Abi-Rached, J. et al. (October 5, 2020). *Towards a Zero-COVID Lebanon: A Call for Action*. Arab Reform Initiative. DOI: <https://www.arab-reform.net/publication/towards-a-zero-covid-lebanon-a-call-for-action/>

⁹⁶ Interview with representatives from health centers (Chtaura, Syrian border).

⁹⁷ Health center near Chtaura.

⁹⁸ Anonymous interview.

⁹⁹ Lebanon Files. (December 27, 2020). A journalist reveals: The number of Corona-deaths in Lebanon is not real... this is what happened. Lebanon Files. DOI: https://www.lebanonfiles.com/articles/%d8%a3%d8%ae%d8%a8%d8%a7%d8%b1-%d9%81%d9%86%d9%8a%d8%a9/%d8%b5%d8%ad%d9%81%d9%8a%d8%a9-%d8%aa%d9%83%d8%b4%d9%81-%d8%a7%d8%b1%d9%82%d8%a7%d9%85-%d9%88%d9%81%d9%8a%d8%a7%d8%aa-%d9%83%d9%88%d8%b1%d9%88%d9%86%d8%a7-%d9%84%d8%a8%d9%86%d8%a7%d9%86-%d9%84/?fbclid=IwAR3EFdfS4TngXzeIKrZ_GVwnQ5g5vvKtQW_QGCHlhqJenDPHO-5vvy9ipp0

¹⁰⁰ Anonymous interview.

¹⁰¹ Anonymous interview.

¹⁰² Anonymous interview with a municipality representative, November 11, 2020.

(USD266.66 at the official rate and USD50 at the black market rate) per month over six months. According to the Ministry of Social Affairs' National Poverty Targeting Program, families that qualified included those with children in public schools, victims of landmines, taxi drivers, and the poorest families.

Yet, relying on inaccurate and outdated data “[caused] hundreds of thousands of families in need to not benefit from any aid relief, further eroding what remains of confidence in state institutions,” according to a report from Siren Analytics, the company that developed IMPACT with the Ministry of the Interior and Municipalities.¹⁰³ For example, policymakers “disregarded” the figure of 460 thousand households registered last April and May through [IMPACT], and instead issued aid to only 260 thousand households.¹⁰⁴ Notably “ad hoc lists used by Central Government and provided by ministries, syndicates and other sources were often outdated and had no input from municipalities, which were completely excluded from the process adopted.”¹⁰⁵ One Mukhtar, or local official, noted that “[the] new poor were disregarded” because of the use of outdated datasets.¹⁰⁶ Echoing these issues, a municipal representative we interviewed said, “aid was going to dead people, or people who had been living abroad for a long time because there was no updated data.”¹⁰⁷

Moreover, the implementation of the National Social Solidarity Program (NSSP) tasked the Lebanese Armed Forces (LAF) with distributing the aid, which excluded other agencies that might have done so more efficiently.¹⁰⁸ For example, the LAF were also responsible for auditing the data provided by the Ministry of Social Affairs. After the explosion, they were also responsible for “dangerous practices related to data privacy” when collecting data.¹⁰⁹ In the wake of the Beirut blast, a number of local and international NGOs also provided emergency aid to the Lebanese who lost their homes. For example, the Lebanese Red Cross provided direct financial support to more than 10 thousand families.¹¹⁰ Though the government’s inability to effectively provide aid reflects the dire economic situation, the issues with data management also prevented it from reaching families in need.

Evaluating the Role of Ma3an and Other Platforms in Stopping the Spread

The government’s decision to launch the Ma3an app did not significantly help mitigate or contain the public health crisis. The ineffectiveness of the app stemmed from a general mistrust in the

government, lack of awareness of the app, and privacy concerns, which were exacerbated by a lack of funding and the worsening economic conditions in the country. Yet it is also unrealistic to expect the app to serve as a fix-all solution for Covid-19; as one public health expert mentioned, a contact tracing app is not a “major tool in the tool box but certainly it is an important tool.”¹¹¹

Many people were simply not aware of the app, and sometimes conflicting information was circulated. Amongst the public health professionals we interviewed, a number of them, including people who work in the public health field, were unfamiliar with it. An interviewee, who led an NGO’s Covid-19 response, said they did “not know about this app, so this is very weird, so most of the population will not know about it.”¹¹² In addition, Sara Chang said, “I have not heard too much about it.”

The messaging around the state of the app also changed; in an interview with SMEX, one of the members of AUB’s development team mentioned that the app was a “beta” version, though that disclaimer was not prominently displayed in public communication materials. As the reviews in the Google Play Store demonstrate, the app has also had persistent functionality issues.

There was also apprehension about downloading the app due to privacy concerns. In an interview, Lina Abou Mrad, the Director of E-Health at the MoPH, mentioned that when they launched the app, they received many complaints about privacy and confidentiality issues.¹¹³ Sara Chang, an independent public health professional working on Covid-19 data visualizations, also expressed that she might have privacy concerns around using the app.¹¹⁴ Likewise, Jade Khalife, one of the members of the #NoCovidLB campaign, stated that while he had seen the app, he is wary of downloading new apps to his phone.¹¹⁵ These comments about the app from the public as well as public health professionals highlight the need for strong privacy protections and better marketing.

The Ma3an app suffered from a lack of funding, which limited its reach and made it more difficult to mitigate privacy concerns. Professor El-Hajj, of the AUB team that helped develop the app, noted that they have had “zero support even for conducting a national campaign.”¹¹⁶ With the Lebanese government’s current financial struggles, it is not surprising that the app is underfunded. Although announcements about the app are aired on television and radio, the lack of a concerted campaign made it difficult to attract new users. The app initially

¹⁰³ Siren Analytics. (2020). *Aid Distribution in Lebanon. An Assessment. Challenges, limitations, and suggestions for an enhanced state-driven response*. Siren Analytics. DOI: <https://www.sirenanalytics.com/files/Aid-Distribution-November-2020.pdf>, p.1

¹⁰⁴ Ibid.

¹⁰⁵ Ibid, p. 12

¹⁰⁶ Ibid, p. 13

¹⁰⁷ Interview with municipal officials.

¹⁰⁸ Ibid.

¹⁰⁹ Siren Analytics. (2020). *Aid Distribution in Lebanon. An Assessment. Challenges, limitations, and suggestions for an enhanced state-driven response*. Siren Analytics. DOI: <https://www.sirenanalytics.com/files/Aid-Distribution-November-2020.pdf>

¹¹⁰ Red Cross. (2020). Direct Cash Financial Support. Lebanese Red Cross. DOI: <https://www.redcross.org.lb/direct-cash-financial-support-2/>

¹¹¹ Interview with Khalife.

¹¹² Anonymous Interview.

¹¹³ Interview with Lina Abou Mrad, September 18, 2020.

¹¹⁴ Interview with Chang.

¹¹⁵ Interview with Khalife.

¹¹⁶ Interview with El-Hajj, Germani, and Bardos.



intended to target travelers and residents, with a specific focus on getting young people to adopt the app. In theory, they would then encourage older people in their immediate communities to adopt it. Professor Germani explained that their focus on young people was because some were still clubbing and protesting. She also noted that they had separate plans to get their message to “overcrowded villages” and people in different socioeconomic groups.¹¹⁷

Regardless of any funding that the government might have allocated to Ma3an, the impact of the economic crisis and the explosion, which happened less than a month before the release of the app, made it harder to convince people to download it, as many were dealing with displacement and increasingly distrusted the government.

In January 2021, the government also launched other electronic platforms to try to mitigate the impact of the pandemic. On January 14, the Ministry of the Interior and Municipalities launched an electronic platform for citizens to request permission to move around during the lockdown. The platform is available at covid.pcm.gov.lb.¹¹⁸ The platform cost around USD150 thousand, which was funded by the World Bank loan dedicated to help Lebanese hospitals during the pandemic.¹¹⁹

¹¹⁷ Ibid.

¹¹⁸ Lebanon 24. (January 14, 2021). *Starting work on the platform “Granting Movement Permit” in Lebanon*. Lebanon 24.

DOI: <https://www.lebanon24.com/news/lebanon/784197/%D9%85%D9%86%D8%B5%D8%A9-%D8%A7%D9%84%D8%AA%D8%B5%D8%A7%D8%B1%D9%8A%D8%AD-%D9%84%D9%84%D8%AE%D8%B1%D9%88%D8%AC-%D9%85%D9%86-%D8%A7%D9%84%D9%85%D9%86%D8%B2%D9%84-%D9%85%D9%82%D9%81%D9%84%D8%A9-%D8%AD%D8%AA%D9%89-%D8%A7%D9%84%D8%B3%D8%A7%D8%B9%D8%A9>

¹¹⁹ Tlais, H. (January 14, 2021). *“The first day of the Corona Situation ‘Getting out of Control’ and the scandal of the ‘Corona Permission platform’”*. Alhurra. DOI: <https://www.alhurra.com/lebanon/2021/01/14/%D8%A7%D9%84%D9%8A%D9%88%D9%85-%D8%A7%D9%84%D8%A3%D9%88%D9%84-%D9%84%D9%84%D8%AE%D8%B1%D9%88%D8%AC-%D8%A7%D9%84%D8%B3%D9%8A%D8%B7%D8%B1%D8%A9-%D9%81%D9%8A-%D9%84%D8%A8%D9%86%D8%A7%D9%86-%D9%88%D9%81%D8%B6%D9%8A%D8%AD%D8%A9-%D9%85%D9%86%D8%B5%D8%A9-%D9%83%D9%88%D8%B1%D9%88%D9%86%D8%A7-%D8%AA%D8%AA%D9%81%D8%A7%D8%B9%D9%84>

Evaluating the Impact on Social Control

The primary purpose of Lebanon's initial lockdown measures in spring 2020 was not to facilitate social control, although the authorities may have exploited the next lockdown to repress the protests that began in October 2019. Then, in early 2021, the government's decision to institute the harshest lockdown, without providing significant economic aid, triggered protests across the country.

In its early response to the pandemic, the Lebanese government declared a state of general mobilization, which did not give the government extensive powers. However, later in the year the government declared a state of emergency, in response to the Beirut explosion, which poses more serious threats to human rights and exhibits potential for function creep. Moreover, certain lockdown measures during spring 2020 also coincided with the authorities' decision to tear down protestors' tents in certain cities and erect barriers around financial institutions, which had been the target of protests. The government's decision to apply a stringent lockdown in January 2021 led to renewed protests across the country.

Declaration of State of General Mobilization and State of Emergency

As the pandemic worsened in the spring, the government's declaration of a state of general mobilization allowed it to regulate control of transportation and communications, and required institutions and individuals to provide emergency services. Then, on August 5, after the Beirut blast, the government announced a state of emergency, which allows the government to set curfew, ban gatherings, and censor publications that threaten national security.

The State of General Mobilization¹²⁰ is a civil regime with emergency powers given to the government in the face of a danger or disaster. This state gave the government the power to use all existing resources to limit the spread of the virus, including securing energy sources, raw materials, and food and industrial supplies; use empty buildings and hotels to isolate the infected and close contacts; require institutions and individuals to provide the necessary services; regulate and control transportation and communications; and support the most vulnerable and economically affected groups. Instead, the government could have opted to use the Infectious Diseases Act of 1957, which provides for the compulsory isolation of infected individuals and contacts, a ban on public gatherings that are not necessary in closed spaces, and the isolation of affected areas. While the state of general mobilization provides the government additional powers, it does little to infringe on individuals' freedoms.

On the other hand, the State of Emergency can facilitate censorship and surveillance.¹²¹ The state of emergency is the declaration of a military regime when the country is facing either an external war, an armed revolution, security disturbances, or a disaster. Initially, the government declared a state of emergency from August 5 to August

18, 2020. Although subsequent renewals are considered illegal, the president verbally renewed it until September 18.¹²² Even after the renewal ended, some of the army's prerogatives were renewed until December 31. The declaration of a state of emergency effectively enforces restrictions on civil liberties, which can lead to abuses of power by the state. For example, it permits the army to close spaces of assembly, set a curfew, prohibit gatherings deemed a threat to security, censor publications (including radio and television), impose house arrest on anyone engaging in activities considered "security threats," enter homes at any time, deport suspects, and expand the jurisdiction of the military court over civilians for "crimes related to breach of security."

There are also procedural issues with the declaration of the state of emergency. Technically, the 2020 state of emergency is deemed illegal since the decree was not published on the day it was declared and the decree has no retroactive effect. Therefore, all decisions taken between August 7 and publication of the decree on August 11 were technically illegal and constituted an infringement of citizens' freedoms. The extension was also illegal since it was a unilateral decision by the speaker of parliament. Then, the council of ministers also decided to extend the state of emergency without the approval of the required two thirds of the cabinet. Instead, it was extended through an administrative memorandum while it should be extended via a decree, though the parliament did formally extend the State of Emergency on August 13. This extension was contested by many human rights organizations, including some who took it to the Shura Council.¹²³

While the state of emergency undoubtedly provides the government with recourse to violate people's rights, it is impossible to gauge whether it would have been implemented had the Beirut explosion not occurred. Nonetheless, the evolution of the State of General Mobilization into a State of Emergency does raise concerns about the potential for function creep.

The Impact of the Lockdown on Protests

The Lebanese protests, which began on October 17, 2019, led to the ouster of former Prime Minister Rafic Hariri and the formation of a new government under Prime Minister Hassan Diab. However, they ran out of steam by the end of February 2020, after the formation of the new government. Therefore, ascertaining the direct impact of the government's Covid-19 response on the protests is difficult, especially when considering the impact of the concurrent economic crisis, but there have been events that appear to demonstrate correlation. For example, on March 27, after the curfew was implemented, the police and security forces forcefully removed protestors' tents in Martyrs' Square, which had been one of the centers of the protests. On May 3, the police did the same in Baalbek.¹²⁴

¹²⁰ Hajjar, S. (August 26, 2020). "Public authority in front of Corona: What is general mobilization in light of the declaration of 'General Mobilization'?" Legal Agenda. DOI: <https://legal-agenda.com/السلطة-العامة-أمام-الكورونا-أي-تعينة-ع>

¹²¹ The Legal Agenda. (August 21, 2020). *Legal Agenda Statement: Four Objections to the Declaration of a State of Emergency*. The Legal Agenda. DOI: <https://english.legal-agenda.com/legal-agenda-statement-four-objections-to-the-declaration-of-a-state-of-emergency/>

¹²² Al-Lehham, M. (September 25, 2020). *Beirut under emergency until the end of 2020: a breach of the constitution and the law, with persistence and assurance*. The Legal Agenda. DOI: <https://legal-agenda.com/بيروت-تحت-الطوارئ-حتى-آخر-2020-خرق-للدستور/>

¹²³ Ibid.

¹²⁴ El Kak, N. (July 7, 2020). *Capitalizing on the Pandemic: Party Responses & the Need for Grassroots Organizing*. Jadaliyya. DOI: <https://www.jadaliyya.com/Details/41404>

Moreover, after protests escalated in late April and early May, the government instituted another lockdown. At the end of April, protests intensified in the northern city of Tripoli, with some labeling them the “second wave” of protests.¹²⁵ On April 27, one protestor was killed by the security forces.¹²⁶ In the following days, a number of Molotov cocktail attacks were directed at Lebanese banks.¹²⁷ On April 30, Lebanon approved an economic “rescue plan,”¹²⁸ which was supposed to clear the path for talks with the IMF, though those talks have since faltered. The day after the approval of the rescue plan, hundreds of demonstrators in Beirut protested in front of the Central Bank.¹²⁹ Then, on May 13, the government decided to reinstate the lockdown after it had been temporarily lifted at the end of April. Per the MoPH’s Covid tracker, there was a relatively large jump in Covid-19 cases over the previous week, with 34 cases on May 6 and 36 cases on May 9, compared to around 4 cases per day the week before. Therefore, it is not entirely clear if Lebanon’s decision to reinstate the lockdown was directly related to the attacks directed at banks and the protests or just the general increase in Covid-19 cases.

However, on May 14, just a day after the “second lockdown” started, several banks, which had been the targets of protestors, erected reinforced barriers around their buildings.¹³⁰ Most banks refused to comment on the issue, but images circulated across social media.

Renewed Protests in Early 2021

The government’s decision to fully lock down the country in January 2021 without providing adequate economic relief sparked protests across the country. On January 23, people in Tripoli and Saida gathered to object to the full lockdown because poverty was increasing and the lockdown prevented many people who are paid on a day-to-day basis from working. In addition, they expressed that the government did not provide families with any financial aid to help them secure basic necessities such as food for their children.¹³¹ On January 27, at least 45 people in North Lebanon were injured in overnight clashes between security forces and demonstrators according to the Lebanese Red Cross.¹³² In addition, security forces fired live ammunition during the riots in Tripoli. Smaller clusters of demonstrations also took place across the country including in Beirut, Tyre, southern Jeye, and the

eastern Bekaa Valley.¹³³ On Thursday January 28, a 30-year-old man, Omar Taybah, was killed by a bullet.¹³⁴ The government’s decision to lock down the country, which was fueled by its decision to reopen the country as tourists came in during the holidays, coupled with the deteriorating economic situation, brought people across the country onto the streets once again.

Evaluating Privacy Measures of Ma3an and New Registration Platforms

While Ma3an is unlikely to emerge as a surveillance tool because of the limited user base, the app does have issues that could jeopardize individuals’ right to privacy. On the positive side, the app considered privacy from the outset, included oversight measures, and did not mandate the app’s use. However, the app collects location data, allows users to share it with third parties, and has an incomplete privacy policy. While the app is not necessarily privacy respecting, it is not widely used and the government has a number of other surveillance tools at its disposal, rendering the possibility of function creep less likely.

Ma3an’s Privacy Measures

Ma3an was released after contact tracing apps in Bahrain, Jordan, Kuwait, and Qatar were widely criticized for violating individuals’ right to privacy. The development team behind Ma3an did institute a number of privacy-respecting measures, including collecting limited data and publishing a privacy policy. Ultimately though, the app still has weaknesses that threaten the right to privacy.

The app collects users’ phone numbers and Bluetooth contacts between users. When a positive test is reported to the MoPH, they check to see if the phone number associated with the test is a Ma3an user. The app then informs the user and requires their consent to upload their anonymized contact data. Ma3an does not collect users’ location data, instead relying on Bluetooth to create contact data between users who have interacted. The app does, however, request location access on Android, which is because older Android devices

¹²⁵ Ibid.

¹²⁶ Human Rights Watch. (April 29, 2020). *Lebanon: One Protester Dead in Tripoli*. HRW. DOI: <https://www.hrw.org/news/2020/04/29/lebanon-one-protester-dead-tripoli>

¹²⁷ Azhari, T. (April 29, 2021). *Banks targeted in Lebanon’s night of the Molotov*. AlJazeera. DOI: <https://www.aljazeera.com/economy/2020/4/29/banks-targeted-in-lebanons-night-of-the-molotov>

¹²⁸ Khraiche, D. (April 30, 2020). *Lebanon Turns to IMF After Default With Plea for \$10 Billion Aid*. Bloomberg. DOI: <https://www.bloomberg.com/news/articles/2020-04-30/defaulted-lebanon-approves-rescue-plan-to-lay-ground-for-bailout>

¹²⁹ France 24. (January 5, 2020). *Lebanese protest against rescue plan as government seeks IMF help*. France 24. DOI: <https://www.france24.com/en/20200501-lebanese-protest-against-rescue-plan-as-government-seeks-imf-help>

¹³⁰ Rose, S. (May 15, 2020). *Banks and Luxury Stores in Beirut hunker down behind steel walls*. The National News. DOI: <https://www.thenationalnews.com/world/mena/banks-and-luxury-stores-in-beirut-hunker-down-behind-steel-walls-1.1019770>

¹³¹ Lebanon Files. (January 23, 2021). *Protests and road blockages in opposition to extending the lockdown period*. Lebanon Files. DOI: <https://www.lebanonfiles.com/articles/%d8%a3%d8%ae%d8%a8%d8%a7%d8%b1-%d9%85%d8%ad%d9%84%d9%8a%d9%91%d8%a9/%d9%82%d8%b7%d8%b9-%d8%a5%d9%88%d8%aa%d9%88%d8%b3%d8%aa%d8%b1%d8%a7%d8%af-%d8%a7%d9%84%d8%a8%d8%af%d8%a7%d9%88%d9%8a-%d8%a7%d8%ad%d8%ac%d8%a7%d8%ad%d8%a7%d9%8b-%d8%b9%d9%84%d9%89-%d8%a7%d8%b3/?fbclid=IwAR2PKTfftZ65R00OoWu43dZJgIFsA6RwPycG7S0nvzpAoetUPg244td0>

¹³² AlJazeera News. (January 21, 2021). *Dozens injured in anti-lockdown protests in Lebanon’s Tripoli*. DOI: <https://www.aljazeera.com/news/2021/1/27/dozens-injured-in-lockdown-protests-in-lebanons-tripoli>

¹³³ AlJazeera News. (January 27, 2021). *Lebanon riots: Security forces wound protestors with live fire*. DOI: <https://www.aljazeera.com/news/2021/1/27/hundreds-protest-lockdown-measures-in-lebanons-tripoli>

¹³⁴ LBCL. (January 28, 2021). *A man died due to his injury during Tripoli protests*. LBCL News. DOI: https://www.lbcgroup.tv/news/d/lebanon/572821/%D9%88%D9%81%D8%A7%D8%A9-%D8%B4%D8%A7%D8%A8-%D9%85%D8%AA%D8%A3%D8%AB%D8%B1%D8%A7-%D8%A8%D8%A7%D8%B5%D8%A7%D8%A8%D8%AA%D9%87-%D8%AE-%D9%84%D8%A7%D9%84-%D8%A7%D9%84%D9%85%D9%88%D8%A7%D8%AC%D9%87%D8%A7%D8%AA-%D9%81%D9%8A-%D8%B7%D8%B1%D8%A7%D8%A8%D9%84%D8%B3-%D9%84/ar?fbclid=IwAR05x5wdCeX5CvIHrmNIEToVo1222AvccmT40ljGuoyXVJHK95_sKaFu

require location access to use Bluetooth, but Ma3an does not store this data.¹³⁵ Though the intention may be good, it does leave the app vulnerable to privacy risks, which we discuss in the next section.

The AUB team that established the app also took oversight and transparency measures. The app has a relatively detailed privacy policy, which expressly states that the app only stores contact data for 21 days after contact occurs.¹³⁶ Additionally, uninstalling the app deletes all of the data stored on the user's device. To delete data on the MoPH servers, users can send an email to the E-Health Unit requesting that any of the previously stored data be deleted. Likewise, users can also contact the same email to edit data and withdraw their consent.¹³⁷

In addition to the privacy policy, which is easily accessible on the app's website, the AUB team also released the code for both the iOS and Android versions of the app on GitHub.¹³⁸ To date, there has been no indication that the code published on GitHub differs from the actual source code of the app, like in some other countries. The MoPH and the AUB team also reached out to local civil society organizations to join an oversight board.¹³⁹ The board has yet to be established.

Most importantly, the app is not mandatory. The AUB team behind the app expressly stated that they did not want to require it for anyone. Professor Marco Bardus noted that there are regional contact tracing apps that "ask you to install quarantine enforcing apps that use geolocation. We don't want to do that because it goes against our principles – ethical, moral principles."¹⁴⁰ In the same interview, Professor Germani stressed that officials from across the government were opposed to mandating the app.¹⁴¹ Ms. Abou Mrad also expressed that there was no political will to make the app mandatory.¹⁴² Despite these considerations, Ms. Abou Mrad said they initially received many complaints about privacy measures on social media.¹⁴³

Privacy Concerns

Privacy concerns regarding the Ma3an app include the centralization of the data and the use of location data. Moreover, the privacy policy does not accurately reflect the potential for third parties to access data including the location data.

First, because the app is built on the Bluetrace protocol, the data is stored in a central database at the MoPH. While the central database

could help the MoPH share data more easily with the Epidemiological Surveillance Unit, it also poses the risk of the data being shared with other third parties, whether they be government agencies or private companies. Additionally, the centralization of the data leaves it more exposed to leaks. Other popular contact tracing protocols, including the Google and Apple Exposure Notification System, use a decentralized model. It is worth noting that the development of the Ma3an app began before the Google-Apple system was released.

Ma3an also risks exposing users' location data to third parties, namely through the OneSignal Software Development Kit (SDK). The app requests location data, which the developers have stated that they only did to be able to include older Android models, but third parties, such as OneSignal, can also access location data if a user permits it.¹⁴⁴ In an effort to include as many potential users as possible, the app extended to include devices as old as Android 5.0, which not only leaves users exposed to the Janus vulnerability, but also potentially allows other third parties to access location data.¹⁴⁵ Although the developers behind the app (and the privacy policy) state that they are not storing location data, the permission request could allow OneSignal, a third party app that helps send push notifications, to access users' location data, in addition to other potentially sensitive data, including users' device type and phone number. While it is not clear what OneSignal might do with these data, their privacy policy lists a limited number of third parties they can share these data with.¹⁴⁶

While it is important that Ma3an published a publicly available privacy policy, the policy does not explicitly mention that OneSignal has access to location data and other personal data.¹⁴⁷ Furthermore, Google Firebase, which the app also uses, could access some of the data. The policy should clearly state that these third parties have access to data, especially in the case of OneSignal, which could be accessing users' location data. Additionally, the privacy policy states Ma3an will delete all of the data from the system after "the pandemic has concluded," but does not give a defined period, leaving the potential for function creep.¹⁴⁸

SMEX's tech team also identified obfuscation issues around hard coded information, and when we reached out to TEDMOB, the app developer, they told us that they were aware of it. At least some of the security issues stemmed from the fact that the app was largely produced on a pro-bono basis. Therefore, TEDMOB did not have the

¹³⁵ Interview with Professor Germani, Professor El Hajj, and Professor Bardus.

¹³⁶ Ministry of Public Health. (2020). "Ma3an" Together Against Corona. MOPH. DOI: <https://moph.gov.lb/en/ma3an>

¹³⁷ Ibid.

¹³⁸ Ministry of Public Health. (2021). *GitHub*. MOPH. DOI: <https://github.com/Lebanese-Ministry-of-Public-Health>

¹³⁹ In full disclosure, the AUB team and the MoPH reached out to SMEX, the author of this report, to join the advisory board. Because of our role as an advocacy organization, SMEX declined the offer, but we remained in dialogue with developers and provided feedback on Ma3an's security. After conducting a static analysis of the application, we provided feedback to the team behind the application. TEDMOB, the application's developer, responded with a detailed email addressing our points.

¹⁴⁰ Interview with Professor Germani, Professor El Hajj, and Professor Bardus.

¹⁴¹ Ibid.

¹⁴² Interview with Lina Abou Mrad.

¹⁴³ Ibid.

¹⁴⁴ Interview with Professor Germani, Professor El-Hajj, and Professor Bardus.

¹⁴⁵ SMEX. (September 11, 2020). *Security Concerns with Lebanon's New Contact Tracing App*. SMEX. DOI: <https://smex.org/security-concerns-with-lebanons-new-contact-tracing-app/>

¹⁴⁶ OneSignal. *Privacy Policy*. DOI: https://onesignal.com/privacy_policy

¹⁴⁷ (July 20, 2020). *Privacy Policy*. MophTracer. DOI: <https://mophtracer.tedmob.com/privacy-policy>

¹⁴⁸ Ibid.

necessary funds to purchase the security measures, such as DexGuard, that they would normally use in these scenarios.¹⁴⁹

New Wave of Electronic Platforms

In January 2021, Lebanon also launched platforms for requests to move during the lockdown and to register to be vaccinated, which demonstrates a lack of strategy and poses a further threat to individuals' right to privacy.

On January 14, the MoIM activated an electronic platform for citizens to obtain permission to move during the full lockdown. The platform is available at covid.pcm.gov.lb¹⁵⁰ The platform, developed by IMPACT, was hastily released and is riddled with problems. First, people discovered that the platform automatically approved every movement request, without checking the name of the person or their preferred destination. They mocked the platform on social media and shared instances where the platform still allowed them to move even though they used fake names and destinations.¹⁵¹ In addition, the website lacked an SSL certificate and a privacy policy, which left users' data vulnerable.¹⁵² After SMEX and other concerned individuals pointed this out, IMPACT responded by securing the website. Like the majority of the Lebanese government's initiatives since the pandemic began, the launch was haphazard and clearly did not account for privacy in its design.

At the end of January, IMPACT also launched a platform for Covid-19 vaccine registration.¹⁵³ The platform collects the individual's name, nationality, ID number, and phone number.¹⁵⁴ While the platform was more secure, it also lacked a privacy policy. In response to complaints from SMEX and other actors, the platform published a privacy policy, but it was only available in English. While IMPACT's social media team has repeatedly affirmed their commitment to privacy, and offered citizens the ability to amend their data,¹⁵⁵ the fact that these platforms were launched in this manner suggests that the release was hurried and the developers did not fully account for privacy concerns during development.

Existing Privacy Threats in Lebanon

The Lebanese state already maintains significant access to citizens' personal data, largely because it owns the two telecommunications

companies Alfa and Touch. Therefore, the data collected by Ma3an and the new wave of electronic platforms must be evaluated through this lens.

In an interview, Professor El-Hajj mentioned that the AUB team reached out to the Ministry of Telecommunications to see if they had any way of tracking contact data that might be useful for a contact tracing app, but the ministry claimed they did not.¹⁵⁶ Nonetheless, the state maintains a duopoly on the mobile operators in Lebanon, and the Cabinet has routinely compelled the Ministry of Telecommunications to share metadata with security agencies.¹⁵⁷ Ma3an, on the other hand, collects a much more limited amount of personal information, and only the Ministry of Public Health has access to it. Professor El-Hajj highlighted this point, mentioning that because "operators in Lebanon are government-owned, telephone numbers, addresses and names are already going over to the government."¹⁵⁸ Therefore, while Ma3an's privacy risks pose a concern that the data could be leaked to third parties, the government likely has access to much of these data already.

Lebanon also has a weak legal framework for the protection of personal data. Law No. 84 of 2018 on Electronic Transactions and Personal Data has yet to be implemented and concentrates power in the executive branch. When the law was passed, the Ministry of Economy and Trade, which acts as the de facto data protection authority, was not prepared to assume the new responsibilities, professionally or financially.¹⁵⁹ Still, there is no record of the Ministry of Economy and Trade processing a single data protection case.

While the law gives data subjects the right to access and amend data and the right to object to its processing, Article 97 of the law gives the Ministry of the Interior, the Ministry of National Defense, and the Ministry of Public Health the right to be exempt from this provision. Article 94 also establishes "certain instances that do not need a license for data processing," which further limits the law's ability to restrict the government's processing of personal data.¹⁶⁰ Through the law, the MoPH and IMPACT apps could technically qualify as an exemption.

Ultimately, although the Ma3an raises privacy concerns, loose enforcement and the relatively low adoption rate present a relatively low risk for function creep, and the new wave of apps seems to indicate that the government will use IMPACT-developed apps going forward.

¹⁴⁹ Interview with AUB team.

¹⁵⁰ Lebanon 24. (January 14, 2021). *Starting work on the platform "Granting Movement Permit" in Lebanon*. Lebanon 24. DOI: <https://www.lebanon24.com/news/lebanon/84197/%D9%85%D9%86%D8%B5%D8%A9-%D8%A7%D9%84%D8%AA%D8%B5%D8%A7%D8%B1%D9%8A%D8%AD-%D9%84%D9%84%D8%AE%D8%B1%D9%88%D8%AC-%D9%85%D9%86-%D8%A7%D9%84%D9%85%D9%86%D8%B2%D9%84-%D9%85%D9%82%D9%81%D9%84%D8%A9-%D8%AD%D8%AA%D9%89-%D8%A7%D9%84%D8%B3%D8%A7%D8%B9%D8%A9>

¹⁵¹ Tlais, H. (January 14, 2021). *"The first day of the Corona Situation 'Getting out of Control' and the scandal of the 'Corona Permission platform'"*.

¹⁵² (January 21, 2021). SMEX. *Lebanon: Privacy Questions for the "Exit Permission Request Platform"*. DOI: <https://smex.org/ar/%d9%84%d8%a8%d9%86%d8%a7%d9%86-%d8%a3%d8%b3%d8%a6%d9%84%d8%a9-%d8%a7%d9%84%d8%ae%d8%b5%d9%88%d8%b5%d9%8a%d8%a9-%d9%85%d9%86%d8%b5%d9%91%d8%a9-%d8%a7%d9%85-%d8%a8%d8%a7%d9%83%d8%aa/>

¹⁵³ McArthur, R. (January 29, 2021). *Egypt and Lebanon launch online registration systems for COVID-19 vaccine*. DOI: <https://www.healthcareitnews.com/news/emea/egypt-and-lebanon-launch-online-registration-systems-covid-19-vaccine>

¹⁵⁴ <https://covax.moph.gov.lb/impactmobile/vaccine/non-medical>

¹⁵⁵ (February 2, 2021). Twitter. DOI: https://twitter.com/impact_gov/status/1356554287753666560

¹⁵⁶ Interview with AUB.

¹⁵⁷ SMEX. (December 18, 2017). *A Brief History of Personal Data Collection in Lebanon*. SMEX. DOI: <https://smex.org/a-brief-history-of-personal-data-collection-in-lebanon/>

¹⁵⁸ Interview with AUB.

¹⁵⁹ (October 11, 2018). *An "Ugly" New Data Protection Law in Lebanon*. SMEX. DOI: <https://smex.org/an-ugly-new-data-protection-law-in-lebanon/>

¹⁶⁰ Ibid.

Impact of Covid-19 Response on Refugees and the Possibility of Social Exclusion

Throughout the Covid-19 crisis, refugees have also faced the threat of the pandemic and the worsening economic crisis. The lockdown exacerbated these issues and in some cases, imposed stricter restrictions on refugees than Lebanese citizens. The Ma3an app, on the other hand, has had limited potential for exclusion, but the new wave of electronic platforms pose more serious threats related to social exclusion.

Unique Impact of the Lockdown

The lockdown has been applied differently and has had more serious ramifications for refugees and vulnerable groups. In early stages of the lockdown, refugees' movement was more heavily restricted; camps were closed by municipalities and the army limited the movement of refugees out of the camps.¹⁶¹ In some cases, refugees were only allowed out to get essential items and seek medical help. However, the dire economic situation put more pressure on them, as many could not work (on a per diem basis). The UNHCR assistance was not sufficient to cover their basic needs because the depreciation of the Lebanese Pound led to the rise in prices of food and basic supplies, according to four refugees who live in different camps across the central Bekaa.¹⁶² Also, visits between residents inside the camp were eliminated as precautions were adopted by the refugees.

In particular, the transport restrictions negatively impacted refugees, as many people were obliged to pay more to access healthcare; taxis are limited and the fares not regulated. A taxi ride that used to cost LBP2 thousand/person (USD1.33 at the official rate, USD0.25 at the black market rate) now costs more than double the old price (>USD3 at the official rate, > USD0.5 at the unofficial rate). Most refugees go to the doctor accompanied by one or two family members. For example, a woman who delivered twins had to pay an exorbitant amount of money for transportation to the hospital to see her newborn because the driving restrictions limit the number of taxis that have the required plate number to circulate. In addition, she faced many obstacles due to the complete lockdown and curfew hours. Each time she traveled to the hospital, she needed to explain her situation to the army and show an official document from the hospital.¹⁶³ Another refugee states that she had started to walk to the health center because she could no longer afford to pay for the taxi.¹⁶⁴

According to one representative from a health center, refugees followed the lockdown and curfew measures more strictly than the Lebanese, as some refugees receive financial and medical aid from NGOs. On the other hand, many Lebanese did not receive any additional services from the government as the financial aid

distributed from the government was based on biased, outdated, and inaccurate data. For example, many vulnerable Lebanese were not on the government lists, while many who were dead, rich, or living abroad were.¹⁶⁵

Risk of Electronic Platforms in Furthering Social Exclusion

Ma3an has not restricted the participation of refugees in society, although the promotion of the app could have been better. Because the app is neither mandatory nor compulsory for accessing any services, the possibility for it to further social exclusion is limited. However, the newer electronic platforms, particularly the vaccine registration platform, do pose risks of social exclusion.

While developers of the Ma3an app made the decision to develop the app to be used on older androids, as far back as 5.0, the trade-off was fewer privacy measures, and also some refugees do not have smartphones and are still using older mobile phones.¹⁶⁶ According to the UN's 2019 Vulnerability Assessment of Syrian Refugees in Lebanon (VASyR), 84% of Syrian families have a mobile phone, though it does not specify the number of phones per household unit.¹⁶⁷ Because of the relatively high price of phone services, refugees share phones, with sometimes up to 10 people using one phone.¹⁶⁸ Additionally, households without phones may also borrow from friends or relatives who do own phones.¹⁶⁹ Therefore, contact tracing would not work as designed and might misinterpret some cases. This issue is further compounded by Lebanon's exceedingly high mobile internet prices, which have only become more expensive with the economic collapse. However, this is not unique to Ma3an or a result of Ma3an's design, but a problem that many contact tracing apps are facing.

Most of the refugees interviewed had not heard about the app. Although a number of NGOs in the camps hosted awareness sessions about hygiene and basic Covid-19 safety measures, they did not mention the Ma3an app.¹⁷⁰ Many refugees reported that they got their medical information from television, but that they had not heard about the app. Additionally, many of the employees we interviewed at health centers had not heard about it, although many of them are located in areas with a high number of cases.¹⁷¹

On the other hand, the IMPACT platforms for requests to leave the house and vaccination registration are inherently more exclusionary because they are the only way citizens can make these requests. These apps could potentially exclude the elderly and those without reliable internet access. Furthermore, the requirement of an ID number will

¹⁶¹ Anonymous interview with a refugee.

¹⁶² Anonymous interview with refugees.

¹⁶³ Anonymous interview with a refugee.

¹⁶⁴ Anonymous interview with a refugee.

¹⁶⁵ Interview with anonymous representative from health center near Chtaura.

¹⁶⁶ Interviews with refugees.

¹⁶⁷ VASyR. (2019). *Vulnerability Assessment of Syrian Refugees in Lebanon*. Reliefweb Web. DOI: <https://reliefweb.int/sites/reliefweb.int/files/resources/73118.pdf>

¹⁶⁸ Interview with refugees.

¹⁶⁹ Goransson, M. (July 2018). *Apping and resilience: Policy Brief. How smartphones help Syrian refugees in Lebanon negotiate the precarity of displacement*. Clingendael - The Netherlands Institute of International Relations. DOI: https://www.clingendael.org/sites/default/files/2018-07/PB_Mobile_phones_July_2018.pdf

¹⁷⁰ Anonymous interview with a refugee.

¹⁷¹ Interviews with representatives from a health center.

exclude almost all Syrian refugees, as only 22% have legal residency.¹⁷² The tools were launched in January, after the interview phase of the project had concluded, so we could not assess how they impacted refugees directly, but they set a worrying precedent for future government apps.



Conclusion & Recommendations

The Lebanese government's response to Covid-19 was deeply affected by the failing economy and political unrest, both of which the government helped create. The government's haphazard lockdown strategy, which shifted based on the political mood, was ultimately ineffective as the government did not develop a long-term strategy to deal with the pandemic. In some cases, the early lockdown did enable the government to suppress protests, but recently, frustration with the lockdown and the lack of financial support from the government have pushed people across the country back on to the streets. Moreover, while lockdown contributed to economic stagnation, it was particularly bad for refugees, who occasionally faced more freedom of movement restrictions.

In the wake of the Beirut blast, the government launched Ma3an, the contact tracing app, which was not widely used and did not limit the spread of the disease. While the app has privacy concerns, it is unlikely that it will become a surveillance tool as the government has turned to new electronic platforms to allow people to move during the lockdown and administer vaccines. These new tools, developed by IMPACT, collect more personally identifiable information and fail to take a privacy by design approach. While IMPACT, a collaboration between the private sector and the government, has implemented privacy and security measures after vulnerabilities have drawn attention on social media, the rushed rollout raises concerns.

We would like to make the following recommendations.

Regarding the Public Health Response:

1. Develop a clear national strategy to better prevent and mitigate Covid-19

After the country reopened in July, the government's ad hoc initiatives have clearly failed. Decisions to lock down the country have been taken haphazardly, and the government has failed to establish consistent policies for incoming travelers and lockdown enforcement. Going forward, there needs to be a clear plan and better coordination between different sectors and committees working on the pandemic response.

2. Improve data-sharing practices between different government entities while respecting the right to privacy

From testing data to the data used to provide economic aid, there have been a number of demonstrated deficiencies throughout the pandemic. The government needs to ensure that accurate data is collected and shared with relevant entities, including the Epidemiological Surveillance Unit, while respecting people's right to privacy. The IMPACT platform presents a potential step in the right direction, but their inability to account for privacy in their design is worrying.

3. Provide more aid to people in need in a more efficient manner and limit the role of the army

Given that Lebanon is facing an economic crisis, the funds it is receiving from international donors, including the World Bank, should be used to provide aid to families in need, especially while instituting harsh lockdown measures. Moreover, the aid must be distributed more quickly and efficiently, which was a clear problem in the early stages of the pandemic. Finally, as demonstrated in the Siren Analytics report, the Lebanese Armed Forces are not necessarily the most qualified actor to distribute aid. Allowing them do so also contributes to the securitization of the public health response.

4. Strengthen cooperation and coordination between the public and private sector concerning the preparedness of hospitals

There needs to be stronger coordination efforts between the public and private sector. Specifically, the government should designate special hospitals in different governorates to treat Covid-19 patients to better manage resources and preserve other health services.

5. Improve support for healthcare workers

The government and donors should strengthen the human resources of the healthcare system and give financial incentives to healthcare workers to work under these conditions. Additionally, they should support healthcare workers with proper PPE. This includes better management of donated resources. For example, a large number of oxygen respirators were stored in inadequate conditions, depriving Lebanese of this equipment.^{173, 174}

6. Reduce the cost of Covid-19 tests

In most cases, tests cost LBP100 thousand (USD67 at the official exchange rate, USD12 at the black market rate), which is particularly expensive given the poor economic situation in the country. The government should make a concerted effort to reduce the cost of these tests.

7. Bolster the capacity of the Epidemiological Surveillance Unit

International donors should assist the MiPH to train more staff in the Epidemiological Surveillance Unit, as the MoPH is understaffed due to its inability to recruit new employees and the high percentage of employees leaving. The WHO has also advised the MoPH to increase the number of staff.¹⁷⁵

8. Improve communication with the media

Media play an important role in the response to the pandemic. However, the Lebanese media has sometimes played a negative role

¹⁷³ Khawaja, A. (January 19, 2021). *The Lebanese are dying from Corona due to the lack of equipment and the state is withholding medical donations*. Ultrasawt. DOI: <https://www.ultrasawt.com/%D8%A7%D9%84%D9%84%D8%A8%D9%86%D8%A7%D9%86%D9%8A%D9%88%D9%86-%D9%8A%D9%85%D9%88%D8%AA%D9%88%D9%86-%D8%A8%D9%83%D9%88%D8%B1%D9%88%D9%86%D8%A7-%D8%A8%D8%B3%D8%A8%D8%A8-%D9%86%D9%82%D8%B5-%D8%A7%D9%84%D8%AA%D8%AC%D9%87%D9%8A%D8%B2%D8%A7%D8%AA-%D9%88%D8%A7%D9%84%D8%AF%D9%88%D9%84%D8%A9-%D8%AA%D8%AD%D8%AA%D8%AC%D8%B2-%D8%A7%D9%84%D9%87%D8%A8%D8%A7%D8%AA-%D8%A7%D9%84%D8%B7%D8%A8%D9%8A%D8%A9/%D8%A3%D8%AD%D9%85%D8%AF-%D8%AE%D9%88%D8%A7%D8%AC%D8%A9/%D9%85%D8%AC%D8%AA%D9%85%D8%B9/%D8%B9%D8%B4%D9%88%D8%A7%D8%A6%D9%8A%D8%A7%D8%AA>

¹⁷⁴ Al Quds Al Arabi. (January 17, 2021). *A scandal in Lebanon: the Qatari donation is stored and hospitals are short of beds and respirators*. Al Quds Al Arabi. DOI: <https://www.alquds.co.uk/%D9%81%D8%B6%D9%8A%D8%AD%D8%A9-%D9%81%D9%8A-%D9%84%D8%A8%D9%86%D8%A7%D9%86-%D8%A7%D9%84%D9%87%D8%A8%D8%A9-%D8%A7%D9%84%D9%82%D8%B7%D8%B1%D9%8A%D8%A9-%D9%85%D8%AE%D8%B2%D9%91%D9%86%D8%A9-%D9%88/>

¹⁷⁵ WHO Lebanon Office. (2021). *Announcement and Clarification Post on Facebook Official Page*. World Health Organization Lebanon Office. DOI: <https://www.facebook.com/wholeb/>

during the management of Covid-19 in Lebanon,^{176, 177} and a positive role at other times.¹⁷⁸ The content should be scientific and delivered to the audience in a professional manner to increase awareness and education among the public, and consequently improve the response to measures and restrictions.

Regarding Applications and Technology to Fight the Pandemic:

1. Approach application development using a privacy by design framework

The Ministry of Public Health, and its affiliated apps, should use a privacy by design framework when developing apps. While the developers behind Ma3an, the contact tracing app, did consider privacy during the design process, the app still had privacy flaws. Moreover, there is a range of flaws in the new platforms developed to allow people to move and administer the vaccine.

2. Remove requests for location data from any contact tracing apps

The developers behind Ma3an enabled the app to request location data to accommodate older Android models. While the developers claimed the app does not store data, third party features used by the app could access that data, thereby jeopardizing people's privacy. **Publish more detailed policies in Arabic and English and explicitly name any third parties that have access to data**

Producing privacy policies is a good first step, but the policies should be as clear as possible and directly list any third party apps that have access to the data, and what they might be able to do with it. Given the weak legal framework for privacy in Lebanon, a strong, transparent privacy policy is especially important so that users can see how their data will be used.

3. Consult academics and civil society while developing these apps

While Ma3an, the contact tracing app, did a better job developing a multi-stakeholder model, with academics heavily involved in the development process, the subsequent apps launched by IMPACT were responsive to criticisms about privacy, but did not include a range of stakeholders ahead of deployment.

Regarding the Potential for Social Exclusion:

1. Develop alternative, non-digital means for movement requests and vaccination registration

Although launching online platforms can streamline the process in some cases, it also makes it difficult for elderly people, as well as those who share mobile devices, which is particularly common among refugees.

2. Enforce the lockdowns evenly across Lebanon

Vulnerable populations, including refugees, who already face restrictions on their freedom of movement, should not face disproportionate restrictions during the lockdown.

¹⁷⁶ Melki, J. et al. (June 17, 2020). *Lebanon: Coronavirus and the media*. *European Journalism Observatory*. DOI: <https://en.ejo.ch/ethics-quality/lebanon-coronavirus-and-the-media>

¹⁷⁷ El-Jack, S. (February 24, 2020). *Lebanon's 1st Coronavirus Case Part of Social Media Jokes, Sectarian Tension*. *ASharQ Al Awsat*. DOI: <https://english.aawsat.com/home/article/2147306/lebanon%E2%80%99s-1st-coronavirus-case-part-social-media-jokes-sectarian-tension>

¹⁷⁸ Khoury, P. et al. (July 23, 2020). *COVID-19 Response in Lebanon Current Experience and Challenges in a Low-Resourced Setting*. *JAMA Network*. DOI: <https://jamanetwork.com/journals/jama/fullarticle/2768892>