REGIONAL POLICY BRIEF
ON HEALTH SYSTEM RESILIENCE AND BBB FROM DISASTERS POST COVID-19 IN THE ARAB REGION

UNDRR
UN Office for Disaster Risk Reduction

From the People of Japan
Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).

TABLE OF CONTENTS

ABOUT THE POLICY BRIEF .................................................................................. 3
Description and aim .............................................................................................. 3
TARGET AUDIENCE .............................................................................................. 3
EXECUTIVE SUMMARY ....................................................................................... 3
1. INTRODUCTION ................................................................................................. 5
2. THE BANGKOK PRINCIPLES ON HEALTH ASPECTS IN THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION AND THE HEALTH EMERGENCY AND DISASTER RISK MANAGEMENT FRAMEWORK AND TOOLS ................................................................................................................. 8
3. STARTING TO BUILD BACK BETTER AFTER COVID-19 ................................. 10
   3.1 The global context ....................................................................................... 10
   3.2 The regional context ................................................................................... 11
4. POLICY OPTIONS FOR CREATING HEALTH SYSTEM RESILIENCE FOR BUILDING BACK BETTER FROM DISASTERS POST-COVID-19 ...................................................................................................................... 13
   4.1 The global approach .................................................................................... 13
   4.2 The approach in the Arab states ................................................................. 17
5. THE WAY FORWARD: A CALL FOR ACTION .................................................... 22
   5.1 Regional recommendations ....................................................................... 22
   5.2 National and subnational recommendations .......................................... 23
6. REFERENCES ...................................................................................................... 25
About the policy brief

Description and aim

This policy brief was developed based on an intensive literature review of regional reports and relevant academic literature on the implementation of the Bangkok Principles on Health Aspects in the Sendai Framework for Disaster Risk Reduction (hereafter the Sendai Framework; UNDRR, 2020c) and the Health Emergency and Disaster Risk Management Framework (WHO, 2019), as well as a review of global and regional policy briefs on COVID-19 impact and recovery with a special focus on health resilience and recovery. This policy brief is designed to highlight existing COVID-19 response measures within the Arab region and presents a set of regional, national and subnational recommendations to guide the Arab governments on ways to enhance health system resilience and recovery post-COVID-19. Furthermore, it provides supplemental actions to support the Integration of Biological Hazards in Disaster Risk Reduction (DRR) Action and planning in the Arab region.

Target audience

This policy brief targets recovery decision-makers and policymakers in national and local governments, ministries of health and other relevant ministries, disaster risk reduction and emergency management agencies in Arab countries, nongovernmental organizations, academia and members of the private sector.

Executive summary

The growing impact of disasters, severely affecting people, the environment, infrastructure and property, has brought to light the need for improving disaster preparedness, response and recovery in advance of a disaster as opposed to considering recovery measures only after its occurrence. The recovery, rehabilitation and reconstruction phase represents an important opportunity to build back better¹, particularly through the incorporation of disaster risk reduction into all development strategies. Lessons learned from previous disaster response and recovery efforts highlight the need for institutionalizing post-disaster assessments and recovery planning to improve risk governance and strengthen coordination among governments, civil society and other stakeholders, using both structural and non-structural measures.

To adequately bridge current operational and management gaps in disaster risk reduction, the Sendai Framework global targets (UNDRR, 2020) lay out specific goals and milestones that must be met for the world to mitigate disaster, loss and risk while also increasing resilience. Priority 4 of the Sendai Framework, in particular, advocates for the accomplishment of these goals by focusing on improving readiness for adequate response and building back better in recovery.
The goal and targets of the Sendai Framework (UNDRR, 2020) include health as a vital component. The Framework reshapes disaster risk management by broadening the scope and definition of the risks to be managed to go beyond natural hazard related disasters while emphasizing the importance of building a resilient health system to boost countries' disaster risk management capabilities.

The COVID-19 pandemic, as one of the deadliest biological hazards in recent memory (Feehan, J., & Apostolopoulos, V., 2021), demonstrates that biological hazards that lead to epidemics and pandemics need to be one of the top priorities for risk management. The last couple of years have outstandingly demonstrated that multihazard management, coupled with multisectoral activities, is crucial to ensure development's long-term viability at all different levels across all sectors.

During the COVID-19 crisis, the Arab countries experienced significant socioeconomic consequences as well as public health and health system repercussions. These effects have overburdened countries' capacities in numerous ways, impeding their ability to achieve the Sustainable Development Goals. The crisis also highlighted several capacity gaps that must be addressed immediately to strengthen governments' response to and recovery from the current COVID-19 outbreaks, placing a special focus on the concept of building back better. The breakdown of the health system occurred is another example that is associated with the negative impact of the COVID-19 pandemic worldwide. This scenario was prominent in some Arab countries and drove most of the overall COVID-19 response policies in these countries.

Managing risks associated with natural or human-made hazards, especially those related to disease outbreaks, necessitates a thorough understanding of risk in all of its dimensions including vulnerability, exposure and hazards including biological hazards. To lower mortality rates and minimize the effects on population well-being, concentrated efforts must be made to boost health system resilience and improve multihazard early warning systems, with a particular focus on biological hazards and disease outbreaks. Furthermore, efforts should be aimed towards the implementation of multihazard systemic approaches that harness risk management by improving collaboration between health authorities and key stakeholders. These efforts should be organized while keeping in mind key operational principles such as country contexts, whole-of-society approaches and whole-of-government approaches.

Considering the current COVID-19 situation, there is a need for a more efficient utilization, management and coordination of resources to consolidate practice and contemporary approaches through the concept of Health Emergency and Disaster Risk Management. Although the process of recovery can vary according to the type of emergency being recovered from, its management is totally dependent on the willingness and the capacity of the government, in addition to the local settings and context (PAHO et al., 2020).

This policy brief discusses the key actions required to build back better and enhance health resilience to all hazards even during the COVID-19 pandemic by introducing the theoretical
concepts of health system recovery; highlighting global efforts, goals and commitment in the disaster and health context; addressing the COVID-19 pandemic's impacts on different dimensions with an emphasis on the health system infrastructure and the need for building back better; exploring global and regional policy alternatives for health system resilience and building back better from disasters post-COVID-19. The policy brief then concludes by offering recommended actions for the way forward at regional, national and subnational levels.

1. Introduction

The Sendai Framework is a landmark framework that demands stakeholders’ involvement at all levels, the global, regional, national, and local, along with commitment and strong leadership. The framework identifies the primary role of states, with responsibilities shared by civil society organizations, local governments, and the private sector to achieve the goals of preventing new – and reducing – hazardous exposure and vulnerability to disasters. This prevention is carried out while increasing recovery and response preparedness and strengthening resilience by implementing inclusive and integrated measures in health, structural, economic, legal, cultural, environmental, social, political, institutional, and technological dimensions, to reduce and prevent related risks (Aitsi-Selmi & Murray, 2016; Carabine, 2015). In this regard, the United Nations General Assembly, representing all Member States passed a resolution on the content of the 2030 Sustainable Development Agenda in 2015 (Sustainable Development Goals | Operation Eyesight).

All these efforts stemmed from the fact that disasters are major stressors of health systems. The health system is affected by the disruption and damage of health facility infrastructure and the loss of critical functions and essential medical services. This impact also extends to disruptions of routine public health programmes, such as vaccination, which add other risks and stressors to the overall health system that are also related to biological hazards. Health care workers are another dimension of the health system who are often vulnerable to different threats ranging from the direct effect of specific disasters to the mental health issues and fatigue that are commonly observed during protracted disasters such as the COVID-19 pandemic.

In this context, realizing that the necessity for comprehensive disaster recovery requires attention to health system recovery by maintaining health system standard levels similar to the pre-disaster level, and by providing opportunities to build back better by creating a more resilient health system. This basic opportunity in health system recovery is at the core of the build back better principle (Saya et al., 2017). The build back better principle is the basic phenomenon by which an emergency recovery has the potential to decrease susceptibility to future disasters and increase health system resilience by managing social, physical, climatic, economic, and environmental shocks and susceptibilities (WHO, 2013).
Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).

This principle is not limited to managing the processes of recovery from emergencies related to specific hazards, rather, it considers all the typologies of emergencies by adapting better healthcare models to address the future needs created by existing system distortions and arising from the population.

By adopting the approach of building back better in health system recovery, governments will ensure that the rebuilt system becomes safer, more resilient, stronger, and smarter. Therefore, it is important to a health system's recovery that the government identify and rectify the inherent weaknesses in the current health system. For instance, health service delivery could be improved during the health system recovery process by addressing any neglected areas of the previous health system such as weak primary and secondary health service linkages, an insufficient focus on noncommunicable diseases and mental health issues and a lack of health care facilities caused by demographic change (Epping-Jordan et al., 2015; Kamara et al., 2017). Moving forward, a window of opportunity also opens in the post-emergency period by creating health reforms in new areas such as gender equity and health financing (Percival et al., 2014; Bertone et al., 2014, Rutherford & Saleh, 2019; Martineau et al., 2017, WHO, 2018).

Health system sustainable recovery aims to respond to the health needs and demands of the population by designing a system that is efficient, effective, and able to mitigate the risk of future health hazards and increase its own resilience. The achievement of this goal is dependent on the main components of the health system as recommended by WHO (WHO, 2019).

The main components of the health system include health care workers, service delivery, financing, access to essential medicines, governance, and the health information system. Furthermore, health system recovery actions should concentrate on four main public health functions including (1) the monitoring and surveillance of morbidity and mortality ratios, health determinants and their associated risks; (2) public health preparedness and responses to natural disasters, disease outbreaks and other emergencies; (3) environmental health and safety; and (4) disease prevention and health promotion through personalized and population interventions that include actions to monitor and assess the social determinants of disease and health inequity. Additionally, the type of emergency that arises influences and determines the health system recovery approach and strategies that are usually derived from countries' contingency plans and related processes.

For instance, the baseline and situation following a natural-hazards-related disaster might be relatively easily evaluated, by quantifying the damage, developing a recovery plan for restoring the system to its natural state, making finances for recovery available and preparing for future natural hazards. The recovery span in cases of epidemics or natural disasters is relatively short because once the recovery process has started, related activities will be consequently cascaded to the subnational levels. On the other hand, emergencies such as conflicts and disputes are typically prolonged and influenced by political factors at multiple levels with varying degrees of legitimacy.
Moreover, such types of emergencies lead to a fragile recovery with a high risk of relapse. The only thing which can strengthen the natural recovery process of these emergencies is the advancement of peace and stabilization in the country.

Additionally, conflict-sensitive programming and the increase in state legitimacy through cooperation between health professionals in post-conflict emergency settings could contribute towards state building, peace sustainability and conflict prevention (Rubenstein, 2009; McLothlin, 2015). Thus, the desired result of health system recovery and the building back better approach is a health system that can advance universal health coverage and thereby provide access, equity, quality and affordable health services to all the population (International Recovery Platform, 2017).

A health system's resilience could also be improved through the introduction of proper measures for reducing disaster risks such as planning regulations for land use and building codes. Additionally, assets could be replaced, and damaged facilities could be converted to an optimum size and modernized through technology updates to make them climate-friendly and environmentally sensitive. The abovementioned renovation work would be on top of the application of green hospital specifications ¹ (Dhillon, V. S., & Kaur, D. , 2015) to reduce the use of water and increase the use of renewable energy.

To ensure that the opportunity to build back better is not missed and that all partners work together at the governance level to achieve this overarching goal, an analysis for the identification of risks, vulnerabilities, key barriers of the health system, health service delivery impediments and also the opportunities of the health system recovery should begin at the planning stage. This should also include an assessment of different resources and options required to overcome the identified challenges.

A stable health system responds to a population's needs and expectations in a balanced manner by improving the health status of individuals, families and communities; defending the population against health threats; protecting people from the financial consequences of illness and providing equitable access to person-centred care. Without solid policies and leadership, health systems cannot respond to these challenges in a balanced manner or make the most efficient use of their resources.

Given the magnitude of the consequences of their not taking place, reconstruction and recovery remain two main critical components of the overall management process to reverse detrimental effects. This process generally requires enormous efforts and resources that are optimally conveyed through various significant pillars including: planning, coordination, needs assessment, health system assessment, financial support, monitoring and evaluation.
2. The Bangkok Principles on Health Aspects in the Sendai Framework for Disaster Risk Reduction and the Health Emergency and Disaster Risk Management Framework and Tools

In March 2016, an international conference was held in Bangkok, Thailand. Recommendations were made at this conference to help countries implement the health-related principles mentioned in the Sendai Framework. The recommended measures included: health incorporation into national disaster risk reduction policies and subnational plans; the integration of emergency and disaster risk management into health strategies at national and subnational levels; increasing cooperation between the health sector and other sectors to strengthen health system for disaster risk management; enhancing resilient health systems and applying International Health Regulations (2005) (IHR, 2016). It also recommended the introduction of private and public investment in the health sector including in emergency and disaster risk management, and the incorporation of disaster risk in health education to enhance the capacity of health care workers in disaster risk reduction. Other measures included: the development of multihazard early warning systems, national risk assessments and health core indicators, transboundary and cross-sectoral collaboration and enhanced development and coherence of national and local strategies, policies, regulations, legal frameworks, and institutional arrangements.

To raise awareness about disaster risk reduction and resilience, the Making Cities Resilient initiative was launched in 2010 and was aimed at municipalities and local government, 4360 of which around the globe had registered as of 2022 (UNDRR, 202b). The foundation of Making Cities Resilient came at the midpoint of the implementation of the Hyogo Framework for Action (2005–2015) (UNDRR, 2015). Since 2015, it has been one of the key methods for delivering Target E of the Sendai Framework (WHO, 2019b). Furthermore, the Making Cities Resilient initiative is guided by means that are important for making cities resilient and are termed the “Ten Essentials” (UNDRR, 2020b).

Given the multiple dependencies and interconnections between the natural world and the way humans live, trade and transport themselves and their resources, the effects of any disaster will ripple out and touch all areas of life. Therefore, it is imperative to adopt a holistic approach for reducing risks. The Making Cities Resilient initiative provided several tools that help in reducing risk and making cities resilient, among which the key tool was the “Disaster Resilience Scorecard for Cities” (“the Scorecard”) (UNDRR, 2020c).

The creation of the Ten Essentials by the Making Cities Resilient initiative simplifies the Sendai Framework’s message by breaking it down into a 10-point checklist containing issues related to governance, planning and response, which could easily be followed at the local government level.
and thereby could help cities achieve the Sendai Framework’s objectives. However, a limitation of this scorecard is that it does not adequately emphasize public health issues and does not include the most important factors of health, such as non-structural and structural safety, hospital capacities and services as well as other public health issues related to disaster risk management. To fill in this gap, a disaster resilience scorecard for cities was designed by the Making Cities Resilient initiative members and UNDRR, the “Public Health System Resilience Addendum” with the support of WHO and other partners. The Addendum is to be used in conjunction with the framework of WHO Health Emergency, UNDRR Scorecard, and Disaster Risk Management (and Health Emergency and Disaster Risk Management). It helps in the identification of weaker areas by the local government and includes issues related to public health that were not emphasized adequately in the original scorecard. The Addendum uses the same structure as the original scorecard’s “Ten Essentials” (UNDRR, 2019a; UNDRR, 2019b) to address health-related emergencies, and it focuses on the wider issues of health recovery and management. It gathers information concerning food distribution and hospitals and can also be referred to as the amplified version (FEWS NET, 2020; UNDRR, 2020a).

It has been emphasized that the Public Health System Resilience Addendum should be used for better results in conjunction with the Health Emergency and Disaster Risk Management Framework developed by WHO (UNDRR, 2017). The key components of Health Emergency and Disaster Risk Management functions include policies, strategies and legislation, planning, risk communications, health infrastructure and logistics, human resources, health and related services, information and knowledge management, community capacity for Health Emergency and Disaster Risk Management, financial resources, monitoring, and evaluation.

Considering the above, it is increasingly clear that additional efforts are required in the Arab region to adopt such frameworks. This can be achieved by incorporating biological hazards in plans, strategies, and national disaster risk reduction policies to assess the interplay between multihazard risks and the health sector; this is to be combined with the enhancement of coordination at the working level between disaster risk reduction institutions and the national health system at national and local levels.

Different ethical challenges arise regarding the Health EDRM. The decisions regarding preferences in risk response to and mitigation of emergency events should include ensuring that human rights and ethical aspects are given due consideration. Moreover, it is important to consider relevant political, pragmatic, economic, ethical, and other factors. Keeping current situations and upcoming public health risks in mind, there is an emerging need for a more efficient utilization, management, and coordination of resources, to consolidate practice and contemporary approaches through the concept of “Health Emergency and Disaster Risk Management”.

Effective health emergency and disaster risk management policies, related programmes, strategies, and practice are guided by different approaches and core principles (WHO, 2019) that
include a risk-based approach. Risks to the community due to health care emergencies depend on three factors, that is, exposure to health hazard threats, vulnerabilities to the threat and the risk management capabilities of the community before and after the emergencies.

Governments and individuals can minimize the risk of health emergencies by reducing their exposure and by comprehensive emergency management, consideration of different health hazards, an inclusive people- and community-centred approach, and multisectoral and multidisciplinary collaboration, considering whole-of-health-system-based and ethical considerations. In the context of resilience, the community-centred approach is supported by many global efforts as it requires synergy between the humanitarian response, sustainable development strategies and peacebuilding. An example of such efforts is the humanitarian-development–peace nexus, which represents a long-term strategic approach to building resilience to various disasters and conflicts by bringing about structural transformations across the aid system (The Movement for Community-led Development, 2022).

3. Starting to build back better after COVID-19

3.1 The global context

The impact of the COVID-19 pandemic has scaled to several dimensions and recovery needs can be identified in all sectors. For instance:

1. **Health:** COVID-19 has impacted the ability of the health sector to maintain the balance between the effects of the infection and the delivery of essential health services. For instance, outpatient clinics were mostly suspended, and patients were rescheduled; nonurgent surgical procedures were stopped as part of surge capacity strategies through staff repurposing; and the distribution and shifts of surgical teams were modified while emergency surgical care continued (Spinelli & Pellino, 2020). Furthermore, millions of vaccines for other communicable diseases were not administered due to COVID-19 response measures, thereby creating an environment of even further increased mortality (UNICEF, 2020a). The public health systems were concerned due to the rise in COVID-19 infection and thus the decrease in their capacities to address curable conditions, leading to potential maternal deaths in Yemen, for example, of up to 50 000; to 500 000 HIV-related deaths in Africa (Ott, 2020, Kenny, 2020); and more than 1.2 million preventable deaths of children under five years old (UNICEF, 2020b, Samuel, 2020). Another negative effect of the global implications of the pandemic is the mental health crisis that has become exacerbated during the pandemic due to the disruptions in services for mental and neurological health and substance use (Abbas, 2021). The pandemic has also affected the supply chain for medicines, medical supplies, and critical equipment (Akande-Sholabi & Adebisi, 2020).
2. Education: Almost 190 countries closed their schools nationwide, thereby impacting the education of more than 1.9 billion students (UNESCO, 2020).

3. Finance: The global economy has decreased by 3.2%, contributing to US$ 8.5 trillion losses (UN, 2020). An increased risk of protracted recession has developed due to distinct constraints in developing countries (UN, 2020).

4. Housing: Before COVID-19, 150 million people were homeless and 1 billion lived in informal housing. This number has greatly increased due to the income losses caused by the pandemic that affected around two billion people working in the informal sector (Nnoko-Mewanu, 2020).

5. Psychosocial: Millions of people are experiencing mental health crises caused by life disruption and loss of livelihood (Kelland, 2020).

6. Environmental: COVID-19 has also affected long term work to address climate change and its impacts. Also, the destruction of the natural environment has been directly linked to the COVID-19 pandemic and has had a major impact on conservation policies that are practiced at multiple scales, and which include protected and conserved areas (Tan & Fulford, 2020).

### 3.2 The regional context

In response to the pandemic, aggressive measures were taken, and lockdowns were declared in many parts of the Arab region, causing severe socioeconomic disruption, which in turn has exacerbated the vulnerability of the region to several natural and human-made hazards, such as the floods in Sudan and Yemen and the devastating explosion at the port of Beirut.

This has shown how exposures to different hazards are connected and can produce a cascade of effects across the impacted regions resulting in potential systemic crises. Additionally, COVID-19 infection had a negative impact on health systems worldwide, even resulting in their breakdown. This scenario was prominent in some Arab States, which warrants establishing and implementing different policies for facing such a pandemic in the future. Like its impact on the international community, the pandemic has had repercussions on different sectors in the region.

<table>
<thead>
<tr>
<th>17 M</th>
<th>55 million</th>
<th>74 million people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP lost</td>
<td>Working hours jobs lost</td>
<td>People pushed into poverty</td>
</tr>
<tr>
<td>US$ 152 billion</td>
<td>14.3 million</td>
<td>26 million</td>
</tr>
</tbody>
</table>

**Fig. 1. Estimated impact of the COVID-19 pandemic on the Arab region (based on United Nations Economic and Social Commission for West Asia (ESCWA) calculations and estimates in July 2020)**
Along with the repercussions of structural issues in the region's health systems, conflicts have had their repercussions on vital health systems, depriving many populations of even the most basic care. Conflict has also placed an unexpected additional strain on national health systems as they provide services to the Arab region’s 11.5 million refugees, including refugees from the West Bank and Gaza Strip, and 14.5 million internally displaced persons. Today, millions of people live in camps, informal settlements, and underserved communities, all of which frequently lack access to essential services and are also densely populated, making social distancing difficult. Host communities are increasingly feeling the economic burden of caring for refugees, migrants and internally displaced persons because of what they perceive to be insufficient international support (UNHCR, 2022).

Analysing COVID-19's repercussions on the health system in the region, for instance, on the system in Lebanon especially following the explosion in the port of Beirut, which put most of the country's health care facilities out of function, reveals that the overall situation deteriorated. This added more challenges to the health system's capacity to deal with the pandemic's waves. The challenges included the capacities of hospitals and intensive care units, laboratory and testing capacities, and the shortage of personal protective equipment (UNDRR, 2021).

Considering other fragile and conflict-affected countries, the pandemic combined with other health stressors such as scarcity of water and sanitation and hygiene (WASH) services, posed more challenges to the health system due to the lack of capacity for coping with such a crisis in terms of medical facilities, equipment, and personnel (OECD, 2020a). In the Syrian Arab Republic, by March 2021 only 64% of the hospitals and 52% of the primary health care facilities remained fully operational owing to the conflict in the country. This explains the initial low number of COVID-19 cases reported in these countries as a direct reflection of access to care challenges (OECD, 2020c).

On the other hand, some developing countries, for example, Egypt and Morocco, show lower average rates for health care expenditure compared with other developing countries. In addition, the number of health care workers in Morocco and Egypt ranges between 0.72 and 0.79 per 1000 people, respectively, which is lower than the WHO recommendation on health personnel of 4.45 per 1000 people. Furthermore, both countries also experience shortages of medical equipment (WHO, 2021).

This limited capacity has been faced by a surge in cases especially in large, densely populated cities (such as Cairo). Such surges were often due to social and religious events (OECD, 2020c). Reopening international borders after the pandemic waves is yet another stress factor. Gulf Cooperation Council (GCC) countries, on the other hand, have invested in health systems and infrastructure, increasing health care expenditure and budget allocations alongside health care worker capacity. This has been reflected in the quality of service and in their bringing the outbreak under control with recovery rates significantly higher than the global average (Arab News, 2020).
Furthermore, these countries have successfully applied a strategy based on prevention, allocation of case detection and tracking means, significant financial and material resources for COVID-19 treatment, and strict control measures (OCED, 2020). The United Arab Emirates and Bahrain, for example, in September 2020, ranked first and third respectively for the number of new tests per 1000 people (Our World in Data, 2020).

Jordan adopted similar strategies to the GCC countries. As a result of its governmental measures, COVID-19 infection and mortality rates in Jordan have remained consistently low from early 2020. The Jordanian government scaled up testing capacity, reaching 70 000 tests per 1 million people in August 2020 – three times the ratio recommended by WHO (OECD, 2020c).

In summary, health system obstacles during the pandemic can be summarized in Fig. 2.

4. Policy options for creating health system resilience when building back better from Disasters-19 pandemic

4.1 The global approach

The consequences of the pandemic have expanded beyond the economy, involving society and public health, and the virus has continued to spread despite the mitigation and response strategies applied. These strategies are likely to persist and shape practices and communities, generating questions on how to anticipate such systemic risks, recover, and adapt to the new norm and the associated changes (Linkov et al., 2021. UNCTAD, 2020).
Local government authorities have responsibilities for policymaking and governance as they play a key role in the emergency management cycle, which is the base for strategic preparedness and eventual response (WHO, 2021). Local government’s role is also key to updating strategies (Kelland, 2020) and in all critical actions related to preparedness, readiness, and response (WHO, 2020a). This will ultimately provide the significant considerations and actions that every country needs to take during the pandemic.

Several actions were taken in urban settlements all around the world during the COVID-19 pandemic to help them achieve sustainable capacity development and increase their preparedness for future health emergencies. Special consideration was given to the readiness and preparedness phase and particularly to recovery between the peaks of the COVID-19 pandemic. Therefore, four key areas in the development of COVID-19 transmission prevention and resilience were emphasized to prepare for future health emergencies (Gibb et al., 2020; Shah et al., 2018).

1. Development of coordinated local plans to effectively respond to health risks and their impacts. For example.
   - a mutual aid cell was established in London, United Kingdom, to address the capacity needs of health systems (Greater London Authority, 2020);
   - Kano, Lagos and Abuja in Nigeria took a multisectoral approach through the COVID-19 Presidential Task Force (Di Caro, 2020);
   - Learning about other local experiences and COVID-19 responses was made possible through webinars organized by UN-Habitat.

2. Compliance with measures was encouraged through crisis and risk communication and community engagement. For example: (1) In Singapore, government messages were transmitted regularly through the messaging app WhatsApp in four official languages (Campbell & McGregor 2020); (2) Religious leaders in some cities of Africa provided worshippers with information about protection from COVID-19 (WHO, 2020b); (3) Municipal police in Turkey delivered food to elderly people (Cvorak, 2020); (4) In Tunisia, municipality officers delivered food to the vulnerable population (Kapitalis, 2020); (5) In Kerala, India, community kitchens were established to supply food at very low prices (Swamy, 2020); (6) A website was launched by New York City to involve residents in the self-reporting of COVID-19 symptoms (Freed, 2020).

3. Appropriate public health measures such as physical distancing, respiratory etiquette and hand hygiene. For example: (1) In Ethiopia and Kenya, antimicrobial fabric (White et al., 2019) and low cost foaming soaps (Whinnery et al., 2016) had been tested pre-pandemic;
Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).

(2) Sao Paulo City Hall in Brazil installed potable water sinks in streets; (3) In Latvia, the number of on-board passengers were reduced in public transportation (Baltic News Network - News from Latvia, Lithuania, Estonia.); (4) Morocco introduced measures for working in the informal sector (Kasraoui & Hekking, 2020).

4. Access to COVID-19 health care services and proper continuation of essential services. For example: (1) In Islamabad, Pakistan, private hospitals offered beds and isolation rooms for the management of COVID-19 (Junaidi, 2020) The Jawaharlal Nehru stadium in India was made available as a quarantine facility (India Today, 2020); (3) Madrid, Spain, converted its ice rink into a morgue (Goodman et al., 2020); (4) A convention centre was converted into a hospital in London, United Kingdom; (5) Drive through COVID-19 sites were rolled out in the United States of America (Yancey-Bragg, 2020).

Considering the above, it is increasingly clear that health systems represent the core of public health in disasters, which necessitates fostering resilience within health system components (Rangachari & Woods, 2020). Therefore, real-time anticipatory responses by frontliners and policymakers are essential in many kinds of disaster.

Taking COVID-19 as an example, important information, such as hospitalization rates, case fatality rates and transmission rates, was needed during the first phase of the life cycle of the crisis to enhance the decision-making process during the second phase with respect to resource mobilization and allocation.

Literature showed specific recommendations to enhance health system resilience to biological hazards and other systemic risks as follows:

1. Ensuring that systems are designed in a recoverable and manner that includes the health system and considers social and economic aspects, and so on.

2. Establishing methods that support resilience quantification to enhance efficient resilience and direct investments.

3. Minimizing cascading failures by emergencies stressors by controlling system complexity.

4. Managing and decoupling connections that are unnecessary in the infrastructure from the necessary connections that need to be controllable.

5. Ensuring system sustainability by managing resources and essential components.

6. Establishing tools for real-time decision-making, based on explicit policy trade-offs in real-time (Hynes et al., 2020).
Achieving health system resilience will involve striking a balance between health delivery components, health care workers, necessary equipment and required protocols. This balance will directly buffer demand and services during crises. For instance, at the beginning of the COVID-19 pandemic, the health system of the Lombardy region of Italy had applied several of the management strategies mentioned above and fulfilled efficiency in health care provision. However, hospital capacity differences between central areas and the outskirts were a clear challenge as a 5–10 surge in ICU patients overwhelmed the small hospitals.

Another dimension to consider is the difference between public and private sector hospitals. Regardless of the location of resources, when it comes to emergency response, quick decision-making that includes resource mobilization is key. However, that is not the usual case due to bureaucratic steps that create some challenges in the overall response. To overcome this, adopting the all-hazards approach, multisectoral coordination and a systemic approach that support the efficient strategic and proactive allocation of resources required for emergency response including hospital resources such as bed capacity can aid in an overall effort to increase the resilience of the health system to systemic shocks (Hynes et al., 2020).

To share lessons learned on recovery by different countries during the COVID-19 pandemic, the International Recovery Platform has summarized practical lessons for recovery from the COVID-19 pandemic in the following principles (Relief Web, 2020).

Fig. 3. Main principles and lessons learned described in Practical Lessons for Recovery from the COVID-19 Pandemic developed by the International Recovery Platform secretariat
### 4.2 The approach in the Arab states

The Arab region's countries have taken several actions in response to the COVID-19 pandemic that are summarized in Table 1.

<table>
<thead>
<tr>
<th>Country or territory</th>
<th>Movement restrictions</th>
<th>Physical distancing measures</th>
<th>Barrier gestures</th>
<th>Health screening and tracking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Complete lockdown for Blida province and partial lockdown in the remaining provinces (March–April 2020)</td>
<td>Prohibition of all public gatherings</td>
<td>Mandatory masks in all public venues and outdoor public spaces</td>
<td></td>
</tr>
<tr>
<td>Bahrain</td>
<td>Night-time curfews (March–May 2020)</td>
<td>Gatherings restricted to 5 people</td>
<td></td>
<td>Mandatory incoming passenger screening and quarantine for +ve patients</td>
</tr>
</tbody>
</table>
| Egypt                | • Night-time curfews (March–June 2020)  
• Restricted opening hours for public venues |                                |                                |                                |
| Iraq                 | Night-time curfews |                                |                                |                                |
| Jordan               | • Full lockdown (March) and night-time curfew  
• Restrictions on opening hours of public venues | Public gatherings restricted to 20 people | • Mandatory incoming passenger screening and quarantine for +ve patients  
• Health tracking app mandatory  
• Mandatory quarantine for all incoming passengers |                                |
| Kuwait               | • Partial lockdown (March–May 2020)  
• Full lockdown (May)  
• Night-time curfew |                                | • Random testing of population  
• Mandatory COVID-19 test for incoming passengers  
• Mandatory quarantine for all incoming passengers |                                |
<table>
<thead>
<tr>
<th>Country</th>
<th>Measures</th>
<th>Public Health Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Libya</td>
<td>Partial lockdown (curfew at weekends, full lock down at weekends)</td>
<td>• Random testing of population</td>
</tr>
<tr>
<td></td>
<td>Restrictions on reopening of certain public venues</td>
<td>• Mandatory COVID-19 test for incoming passengers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mandatory quarantine for all incoming passengers</td>
</tr>
<tr>
<td>Lebanon</td>
<td>• Full lockdown (March, May 2020)</td>
<td>Mandatory COVID-19 test for incoming passengers</td>
</tr>
<tr>
<td></td>
<td>• Night-time curfew</td>
<td></td>
</tr>
<tr>
<td>Morocco</td>
<td>• Night-time curfew</td>
<td>Mandatory COVID-19 test (PCR and serology) for incoming passengers</td>
</tr>
<tr>
<td></td>
<td>• Restrictions on opening hours of public venues</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Movement restrictions in certain cities/areas</td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>Night-time curfew (ended August 15)</td>
<td>• Screening of all incoming passengers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mandatory quarantine for incoming passengers</td>
</tr>
<tr>
<td>West Bank and Gaza</td>
<td>• Localized night-time curfew</td>
<td></td>
</tr>
<tr>
<td>Strip</td>
<td>• Restrictions on reopening of certain public venues</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Health tracking app mandatory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Thermal screening in all public venues</td>
</tr>
<tr>
<td>Qatar</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Gatherings limited to 15 people indoors and 30 people outdoors</td>
<td></td>
</tr>
</tbody>
</table>

Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).
<table>
<thead>
<tr>
<th>Country</th>
<th>Initial Response</th>
<th>Additional Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>Full lockdown or night-time curfew depending on area (ended end of June)</td>
<td>Umrah pilgrimage suspended Public gatherings limited to 50 people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mandatory COVID-19 test for incoming passengers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mandatory quarantine (2 days) for incoming passengers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Health tracking app available and mandatory</td>
</tr>
<tr>
<td>Syrian Arab Republic</td>
<td>Partial curfew Restrictions on reopening of certain public venues</td>
<td>Prohibition of large public gatherings</td>
</tr>
<tr>
<td>Tunisia</td>
<td>• Full lockdown (March-May)</td>
<td>Masks mandatory in all public venues Thermal cameras for fever screening in airports and at borders crossings with neighbouring countries</td>
</tr>
<tr>
<td></td>
<td>• Night-time curfew (May-June)</td>
<td>• Mandatory COVID-19 test for incoming passengers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Strict quarantine programme for 18 000 repatriated Tunisians</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Mandatory self-quarantine for incoming passengers from medium to high-risk countries</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>• Night-time curfew (March–July)</td>
<td>Social gatherings limited to 10 people Masks mandatory in all public venues and public transportation</td>
</tr>
<tr>
<td></td>
<td>• 2-week full lockdown (April)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Travel restrictions in and out of Abu Dhabi</td>
<td></td>
</tr>
<tr>
<td>Yemen</td>
<td>• Night-time curfew (April–July)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Localized, short-term full lockdowns in certain areas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Restrictions on travel between provinces</td>
<td></td>
</tr>
</tbody>
</table>

Note: The table demonstrated initial country responses only between March and August 2020, and the information in the table may not be comprehensive or fully up to date.

Source: OECD (2020c).
Arab countries boosted humanitarian outreach and medical diplomacy amid the crisis. The United Arab Emirates provided medical assistance and delivered aid supplies in March 2020, positioning itself as a major medical assistance provider (OECD, 2020). Qatar and Kuwait also followed suit. Morocco proved to be especially active, dispatching gloves, sanitary equipment, and medical supplies via national airlines to various other African countries.

The national governments in Arab countries strengthened institutional coordination by creating inter-ministerial structures soon after the confirmation of the first COVID-19 cases.

Technical and scientific communities were also created for monitoring, progress evaluation and anticipation of direct and indirect COVID-19 effects during the crisis. For example, the Tunisian Government’s COVID-19 Monitoring Authority, which includes senior ministerial officials, focuses on the imposition of safety measures to fight the virus, coordination between the national and regional committees, monitoring and regulating the supply of basic products, distribution of social assistance to those living in poverty and providing recommendations to the national committee.

It is pertinent to mention that several countries have taken a centralized approach, which has proven to be a sensible choice and showcases the crucial role of centres of government during a crisis (OECD, 2020b). However, the role of the local level in providing tailored and operational solutions has also created tension between the central and decentralized levels in countries such as Tunisia (Derbali, 2020).

Countries imposing confinement measures also adopted policies to support public services and avoid their interruption. Ongoing public administration is also being facilitated through the development of teleworking arrangements and online tools. Practical teleworking manuals outlining advice and tips to support it were also developed in Jordan and Morocco (Court, 2020). Paper-based processes, the maturity level of digitalized services and the incompatible skills of civil servants made teleworking in public administration complicated. To reduce COVID-19 transmission, Morocco also created a series of new digital services, and Tunisia created a digital wallet to eliminate long queues for the payment of disbursements at post offices (African Manager, 2020).

Important hygiene rules and preventive measures for COVID-19 were communicated through public service announcements using TV, radio and social media platforms in several countries. For example, the Ministry of Culture of Jordan enlisted several Jordanian actors and influencers to launch an awareness campaign video during the crisis. The actors and influencers also provided tips for children to spend their time in quarantine productively (Jordanian Ministry of Culture, 2020). Governments also developed websites sharing COVID-19-related updates and information. The websites include FAQs and health and safety tips and address the spread of misinformation.

The Arab countries also coped with the crisis by facilitating the prompt procurement of essential and sanitary goods to meet the fast-evolving needs. For example, the Tunisian National Authority
for Public Procurement published a circular highlighting the importance of established provisions to exclude force majeure and loosen public procurement procedures for public buyers (OECD, 2020d). To decrease crisis impact and encourage future long-term durability and resilience, efforts are being made to build up critical infrastructures such as health care and essential supplier facilities. Economic and social recoveries in such cases will depend on public governance responses. Infrastructures will be important in building a strong, coordinated, responsive, reliable, open, inclusive, transparent, and accountable public sector. As a result, countries will be able to anticipate and respond to future shocks efficiently.

COVID-19 vaccine developments are expected to boost the supply and infrastructure of the health care industry in several Arab countries. In particular, the partnerships between Morocco, Saudi Arabia, the United Arab Emirates, other countries outside the region and private companies to support vaccine research and advanced trial phases are likely to affect industry dynamics. The United Arab Emirates started phase III trials in July 2020 (Bardsley, 2020). Saudi Arabia started trials in August 2020 for two Chinese companies, Sinopharm and CanSino Biologics. Egypt has also partnered with China to develop and distribute two COVID-19 vaccines developed by Sinopharm, all leading to reinforced industry collaboration between China and Arab countries (Burton, 2020). This took place in parallel to global efforts in the same context, such as COVAX, that aim to offer doses for at least 20% of populations through the active management of the vaccine portfolio and led to the introduction of the vaccines in all countries in the region by April 2021 (Abubakar et al., 2021).

The private sector’s support for the development of the health system will increase with greater public and private investments in health care provision (Ghalia Al Bajali, 2020). The health care industry in the Gulf countries is seeing an increase in private investments due to new government strategies, regulatory reforms and demand, which is driven by the countries’ ageing populations, mandatory health insurance and lifestyle-related diseases. In particular, COVID-19 has boosted investments in digitization and telehealth. Annual investments in digital infrastructure in the GCC are expected to grow by between 10% and 20% in two years, and teleconsultations were expected to quadruple by the fourth quarter of 2020 (Middle East and African Business, 2020). In Morocco, a start-up, MAScIR, has the capacity to produce one million PCR tests per month. Additionally, public–private partnerships between the Ministry of Industry in Morocco and several private sector actors have helped develop a local ICU bed that is much more cost-friendly than imported models.

Different examples from the regional literature can also be considered in this context from another angle. In the crisis of Palestinian refugees in the Syrian Arab Republic, the United Nations, Relief and Works Agency (UNRWA) and its delivery of services are a good example of a situation in which different approaches were taken regarding resilience capabilities (UNRWA, 2017), including:

1. Absorption: The over-utilization of services was managed by multitasking and task-shifting behaviours to sustain service delivery.
2. Adaptation: This was achieved by adjusting resource operations without changing system structures.

3. Transformation: Necessary services that did not previously exist were established. UNHCR partner agencies have created policies to build resilience in crisis-affected regions that host a sizeable refugee population such as Egypt, Iraq, Jordan and Turkey (UNDP, 2018). Strong leadership enhanced economic opportunities and continued international partnership and outreach are important factors to create strong resiliency in the face of crisis that will help in overcoming risks related to national systems and capacities (UNDP, 2018).

5. The way forward: A call for action

Taking into consideration the national and regional consequences of the pandemic and of other emergencies on health systems, a special focus should be directed towards adopting comprehensive and sustainable recovery solutions.

This could be achieved through interregional vertical and horizontal cooperation and by advancing complementarities between existing disaster risk reduction measures and efforts (UNDRR, 2020a). Such harmonized solutions will reduce the risk of disasters and enable health system recovery now and in the future.

A set of recommendations and priority actions can provide cascadable and adoptable options for short- and long-term roadmaps at regional, national, and local levels.

5.1 Regional recommendations

1. Support and advocate regional solidarity for health system resilience and recovery.

2. Expand collaborative efforts to support the most vulnerable, least developed countries, and fragile states expand their capacities and narrow the existing developmental divides and gaps with a focus on health aspects.

3. Expand the use of existing regional platforms and partnerships for all critical aspects, such as understanding existing and emerging risks, early warning and alert generation, sharing data and information, collaborative learning, strategic planning, research and innovation, pooling of resources and finances, and building back better for a sustainable future.
4. Encouraging continuous dialogue, cooperation, and effective communication among the countries of the region by activating channels for support and investment in the aspects of health system recovery and DRR.

5. Supporting and facilitating joint investments and cooperation in the field of technology and health in all its components.

### 5.2 National and subnational recommendations

1. Implementing a comprehensive set of measures, calibrated against national and local capacity and context, to slow down transmission and reduce mortality associated with COVID-19, ultimately with the aim of reaching and maintaining a steady state of low-level or no transmission.

2. Appropriate strategies at the national and subnational level must balance measures that address the direct mortality attributable to COVID-19, the indirect mortality caused by health systems becoming overwhelmed and the interruption of other essential health and social services, and the acute and long-term detrimental effects on health and well-being of the socioeconomic consequences of certain response measures (WHO, 2020d).


4. Maintaining an essential supply of critical functions and services.

5. Establishing a funding mechanism to support the implementation of the Sendai Framework, disaster risk reduction activities and health system resilience and recovery actions.

6. Maintaining an institutional continuity between preparedness, response, recovery, mitigation and sustainable development measures with the establishment and upgrade of existing preparedness protocols, emergency standard operating procedures, business continuity planning, health recovery procedures and capacities to include specific, actionable measures for national and local contexts (Platform on Disaster Risk Reduction, 2018).

7. Assessing the economic consequences of biological hazards on various sectors of the economy as a helpful starting point for integrating biological hazard management into DRR and development planning (Shaw et al., 2021).
8. Ensuring universal health coverage, and that health systems can meet the needs of youth in the modern era. During the COVID-19 recovery phase, promoting public health, testing, mental health diagnosis, treatment, and provision of mental health services.

9. Educating the public about the importance of accurate public health information in various modes of communication (Organisation for Economic Co-operation and Development, 2020) and empowering all citizens specially youth to make evidence-based decisions about their health, while also taking a proactive role in avoidance and mitigation.

10. Boosting national capacity for pseudonymized data collection via analysis and distributing data de-identified by age, gender, race, and other demographic characteristics, particularly addressing youth organizations during and after the pandemic.

11. Empowering evidence-based research (WHO, 2020c) through the development of research agendas that support advancing evidence-based knowledge and practices in addition to innovation in the context of disaster recovery (Organisation for Economic Co-operation and Development, 2020).

12. Using and rebuilding the health system in such a way that it ensures a health service delivery that is better than in the pre-emergency situation and ensuring that health system recovery actions are conducted in the four main functions of public health (WHO–EMRO, 2020) including (a) the monitoring and surveillance of morbidity and mortality ratios, health determinants and their risks; (b) public health preparedness and its responses to natural hazard related disasters, disease outbreaks and other emergencies; (c) environmental health and safety; and (d) disease prevention, health promotion and population interventions that include actions to monitor and assess the social determinants of the disease and also health inequity.

13. Using the build back better principle to prepare emergency recovery programmes to decrease susceptibility to future disasters and to build health system resilience by managing social, physical, climatic, economic and environmental shocks and susceptibilities and building systems that are safer, more resilient, stronger and smarter.

14. Identifying and rectifying the inherent weaknesses of previous health systems. For example, health service delivery could be improved during the health system recovery process by addressing any neglected areas of the previous health system by means such as strengthening primary and secondary health service linkages, health system infrastructure, focusing on noncommunicable diseases and mental health issues, and constructing new health facilities based on demographic changes in addition to the distribution of health facilities.

Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).
15. Fostering community action, empowerment, and engagement in all phases of disaster risk management, including training the community health workforce for risk communication, prevention, emergency preparedness, response and recovery that is relevant to the local context and people’s specific vulnerabilities.

Expanding the utilization of e-governance and emerging technologies in recovery.

6. References


Arab news (2020). The average recovery rate for GCC was 81.4% as of September 2020, compared to a global average of 57%. https://www.arabnews.com/node/1733941/middle-east


Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).


and the environment (United Nations General Assembly, 2016).

Integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).


OECD (2020d), Improving the E-procurement Environment in Tunisia: Supporting vulnerable groups in gaining better access to TUNEPS, Paris.


Our World in Data (2020). Total COVID-19 tests per 1,000 people. Retrieved May 29, 2022, from https://ourworldindata.org/grapher/full-list-cumulative-total-tests-per-thousand


Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).


Build Back Better (BBB): The use of the recovery, rehabilitation and reconstruction phases after a disaster to increase the resilience of nations and communities through integrating disaster risk reduction measures into the restoration of physical infrastructure and societal systems, and into the revitalization of livelihoods, economies, and the environment (United Nations General Assembly, 2016).


Yancey-Bragg N. Going to a drive-thru COVID-19 testing site? Here’s a step-by-step look at what to expect. USA Today. 20 March 2020