



SCIENTIFIC RESEARCH MONITORING ON COVID-19

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(Issue 431)

مركز أبوظبي
للصحة العامة
ABU DHABI PUBLIC
HEALTH CENTRE



Abu Dhabi Public Health Center (ADPHC) is gathering the latest scientific research updates and trends on coronavirus disease (COVID-19) in a daily report. The report provides summaries on breakthrough or updated research on COVID-19 to allow health care professionals and public health professionals get easy and fast access to information.

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Research

Titles



Statistics



Articles

Summary

Note : All articles presented in this report represent the authors' views and not necessarily represents Abu Dhabi Public Health Center views or directions. Due the nature of daily posting , some minor language errors are expected.

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The views and opinions expressed in this report are those of the authors and do not reflect the official policy or position of the Abu Dhabi Public Health Center (ADPHC).

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response to COVID-19
Pandemic

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response to COVID-19
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Recommendations for
Improving pandemic
preparedness and
management

A pandemic recap:
lessons we have learned





Figure 1: Total Number of Infected, Recovered, and Death Cases

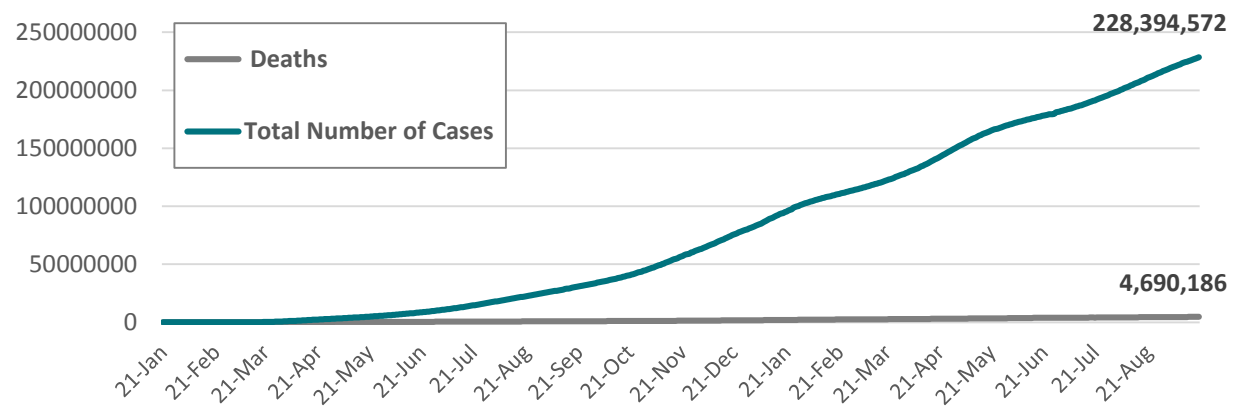


Figure 2: Daily New Infected COVID-19 Cases

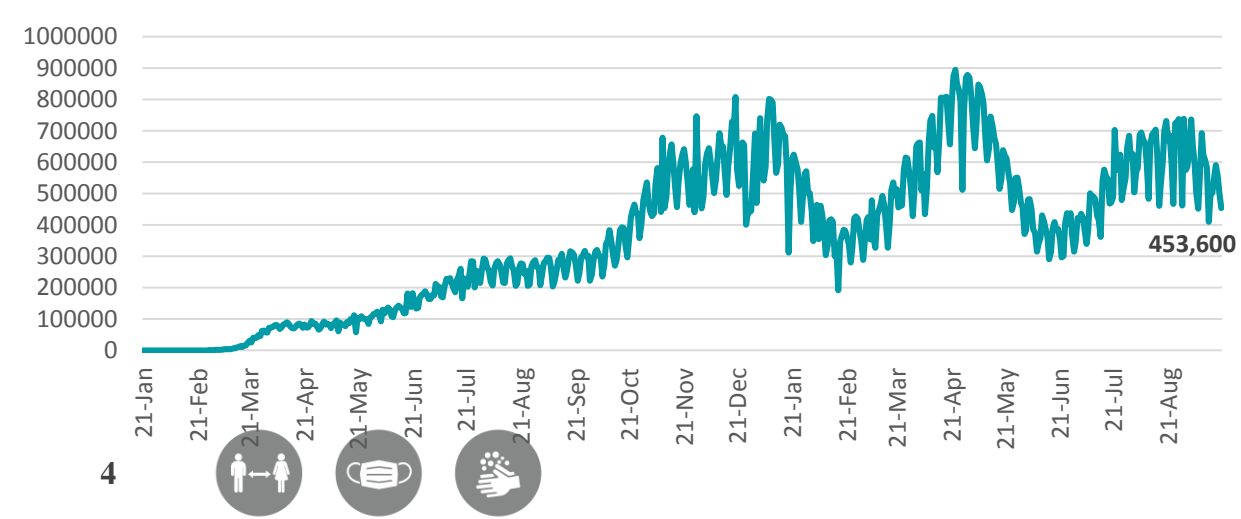


Figure 3: % of people vaccinated fully & partly against COVID-19

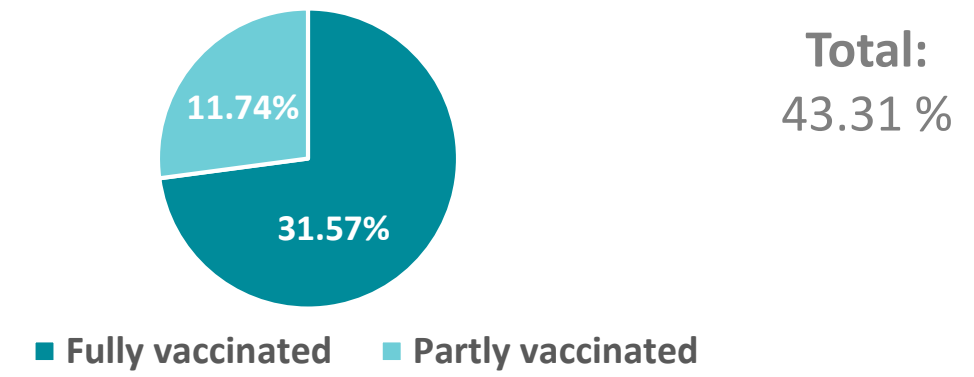


Figure 4: Global Daily New Deaths Due to COVID-19

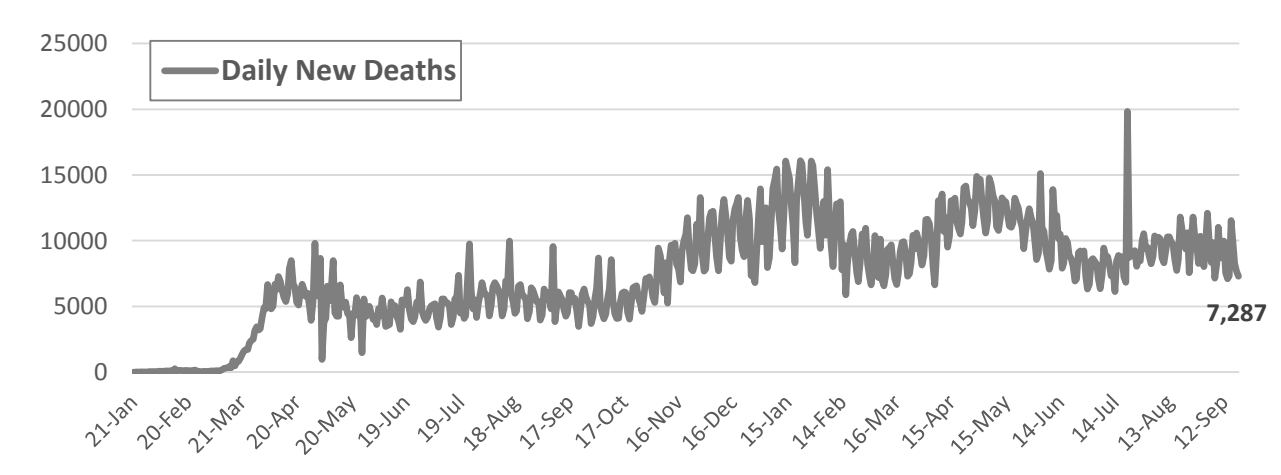
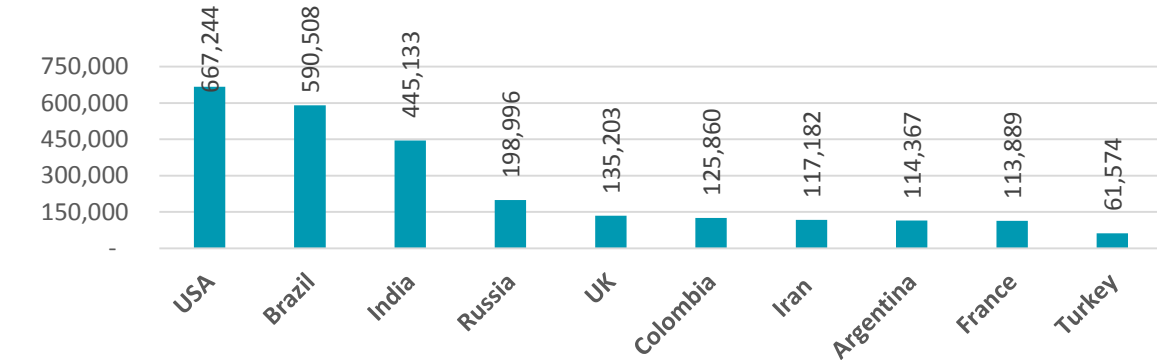
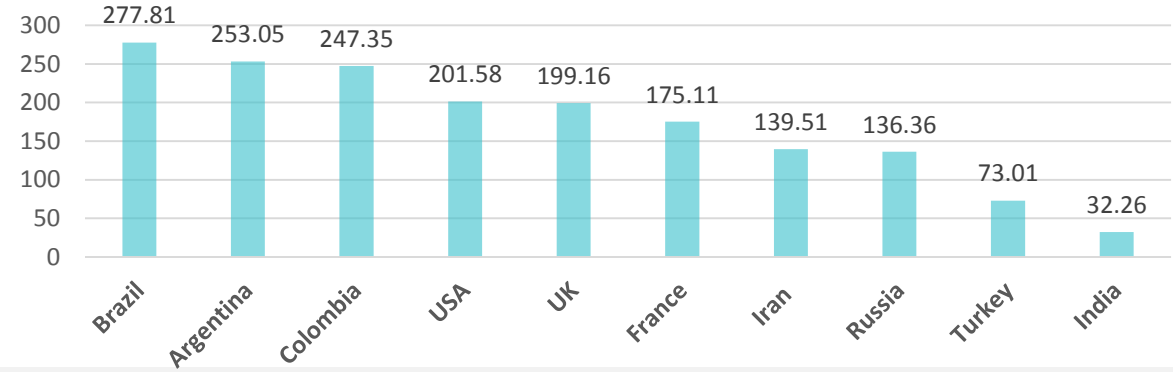


Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

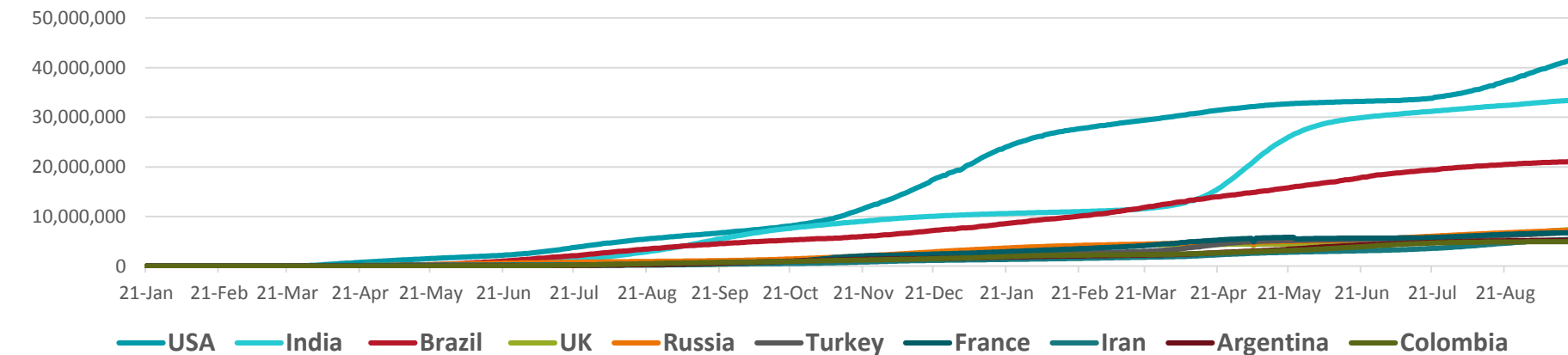
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	41,716,516
India	33,478,419
Brazil	21,230,325
UK	7,429,750
Russia	7,294,672
Turkey	6,847,259
France	6,746,220
Iran	5,424,835
Argentina	5,238,610
Colombia	4,939,251





Figure 8: COVID-19 Status in the UAE (Federal Competitiveness and Statistics Authority Dashboard)

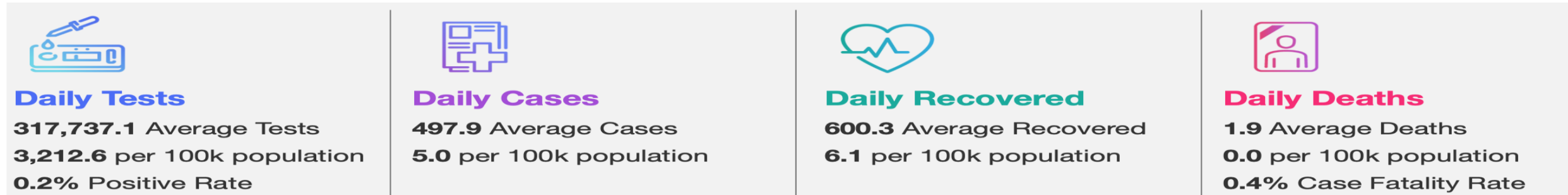


Figure 6A: TOTAL Number Of Infected And Recovered Cases Due To Covid-19 Reported By The UAE

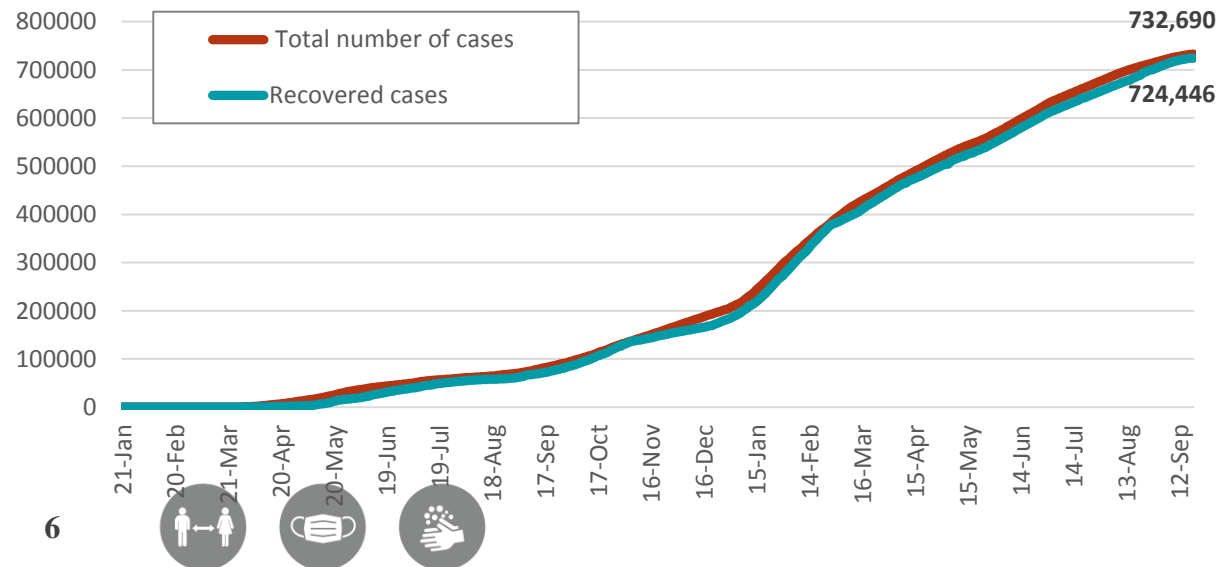


Figure 6 B: TOTAL NUMBER and Percentage of UAE population Vaccinated

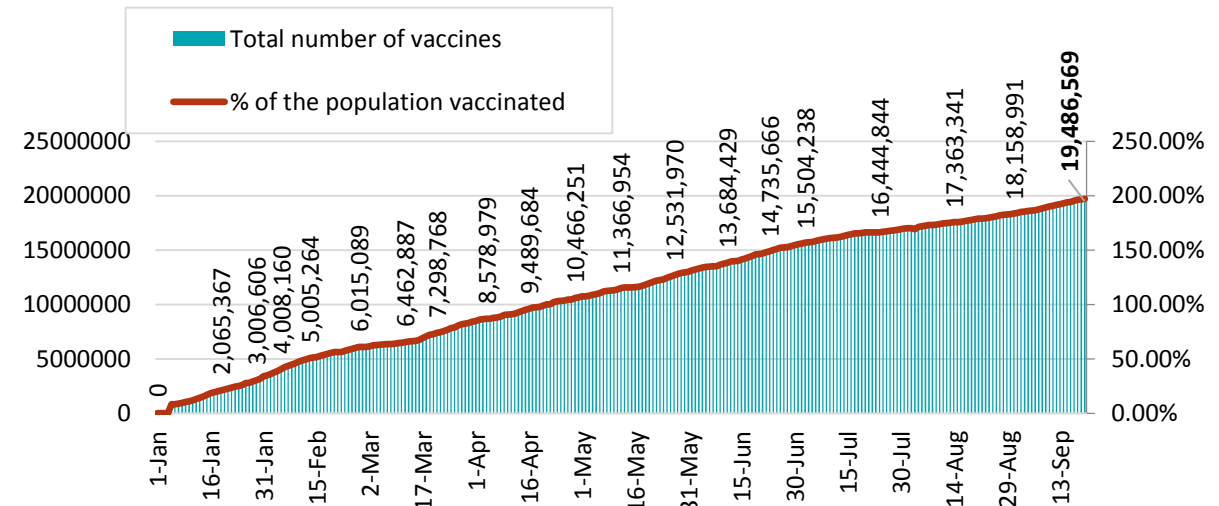




Figure 7A : **Global Distribution of COVID-19 Cases**

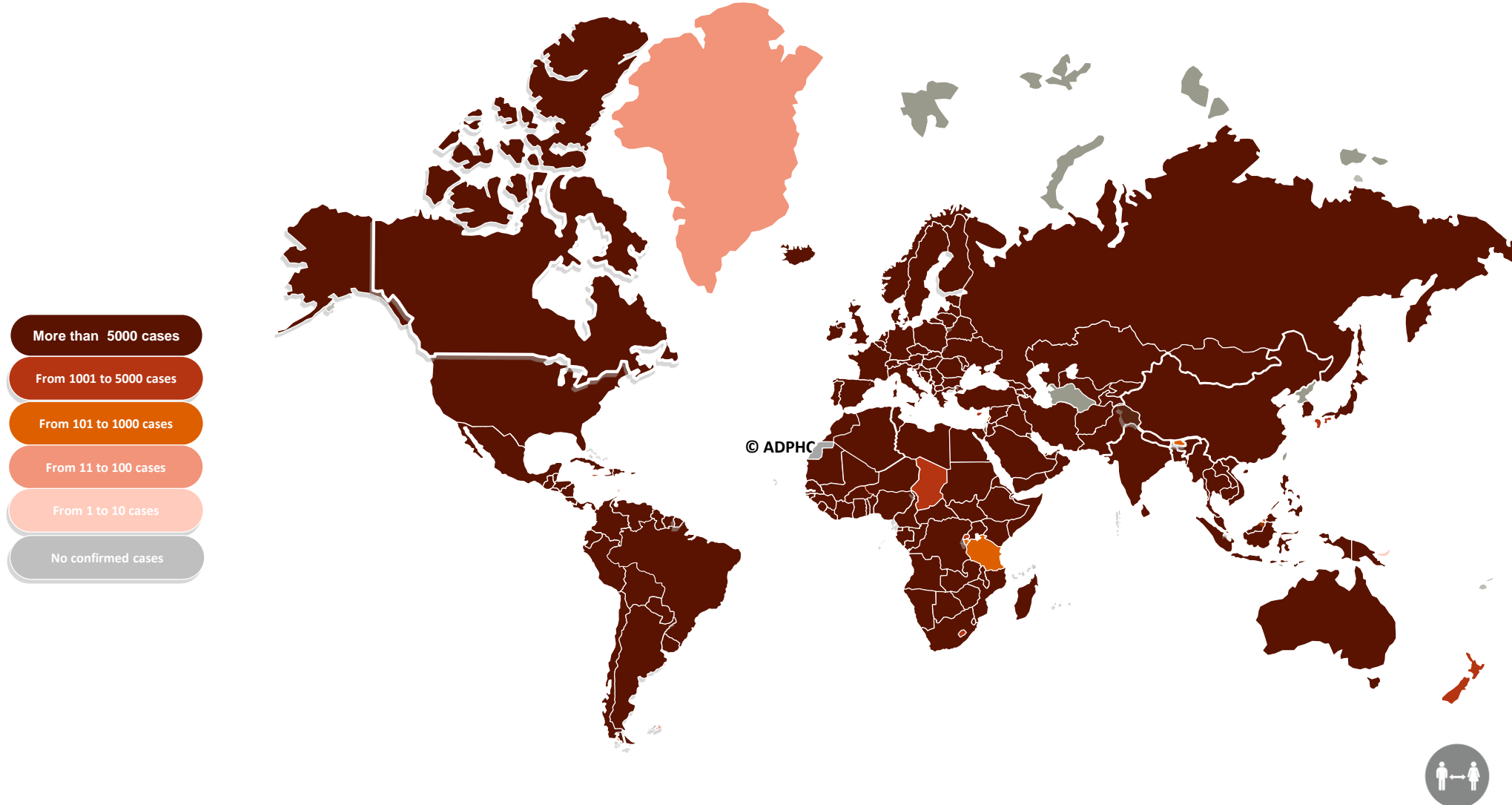
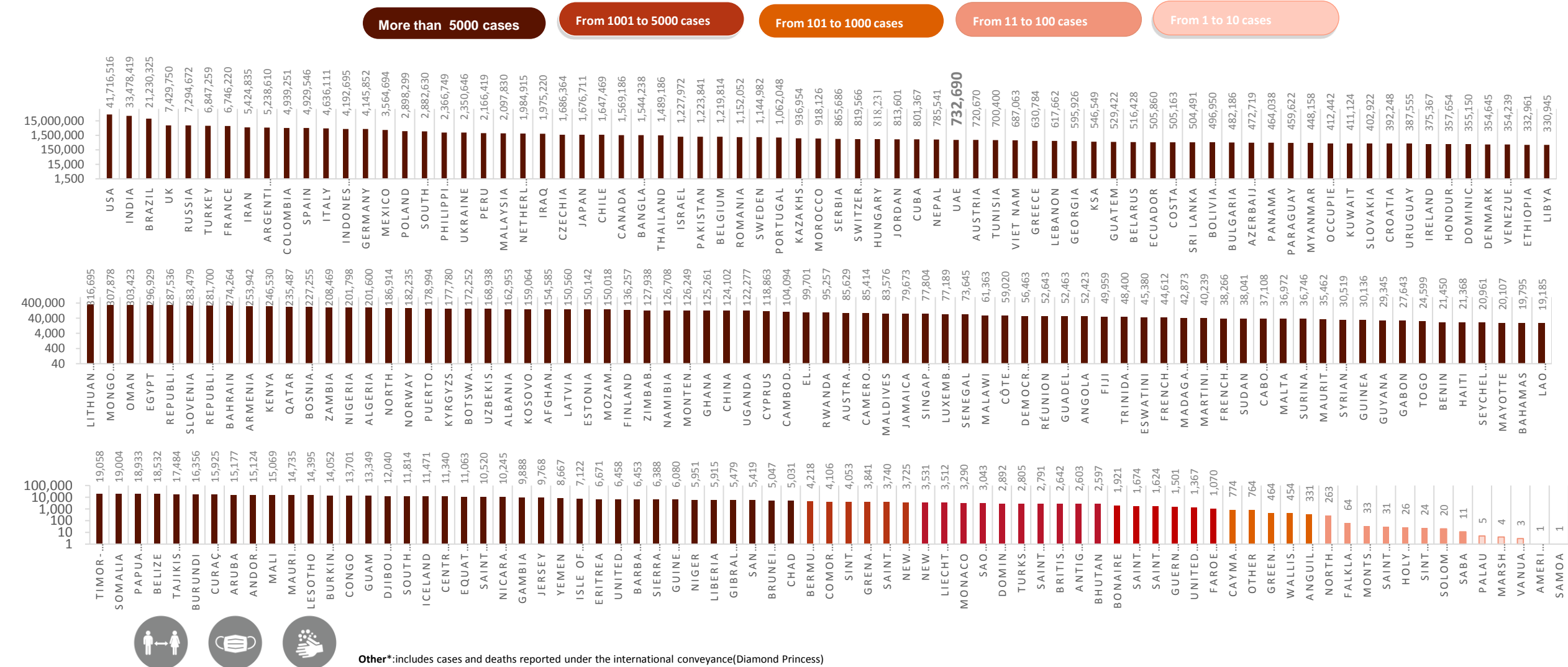




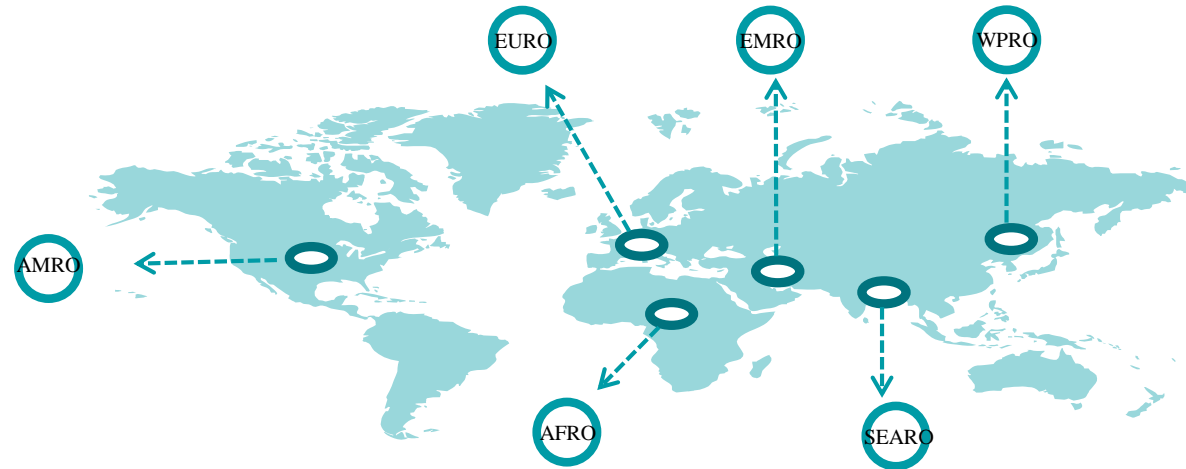
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



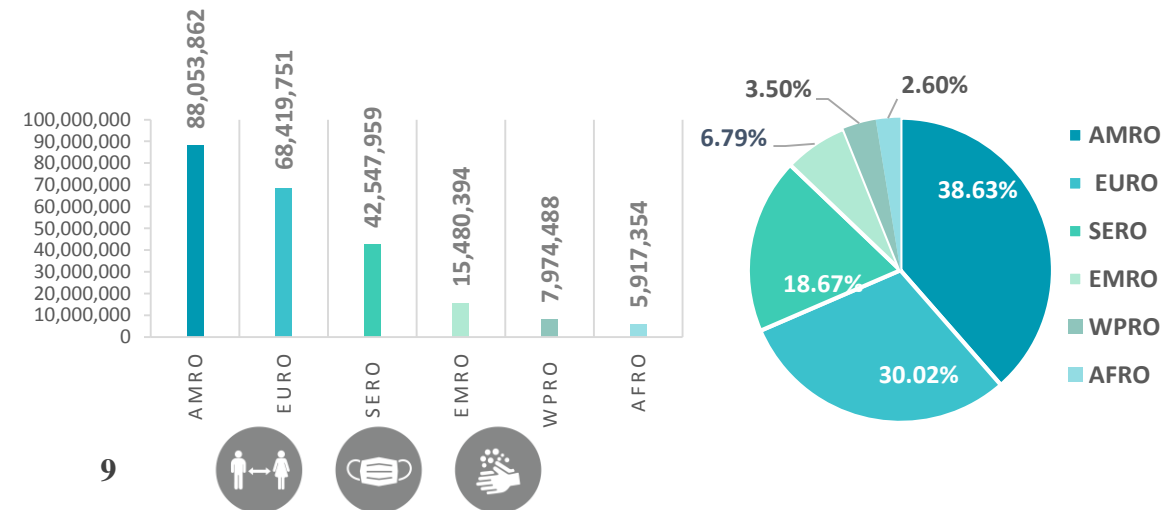
Other*: includes cases and deaths reported under the international conveyance(Diamond Princess)



Figure 6: Global Distribution of COVID-19 Cases per Region



INFECTED



DEATHS

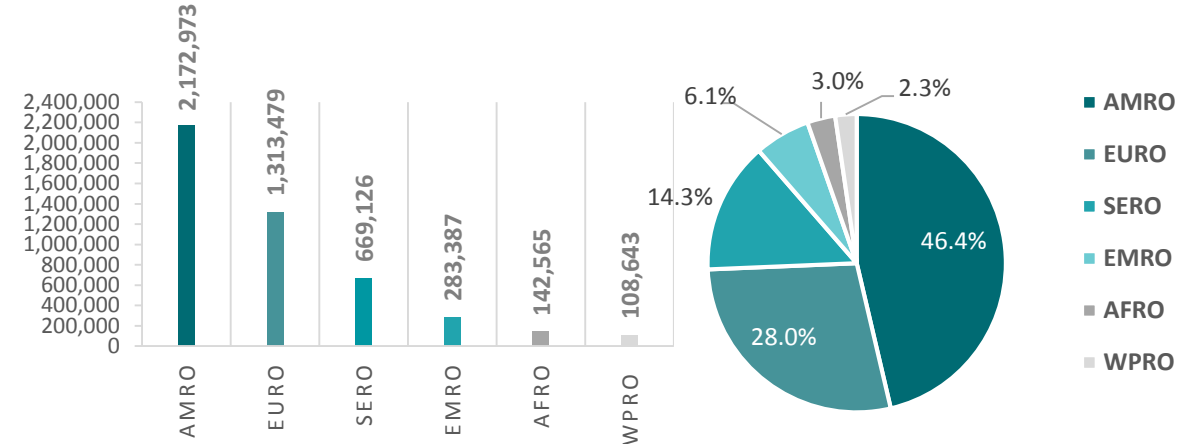
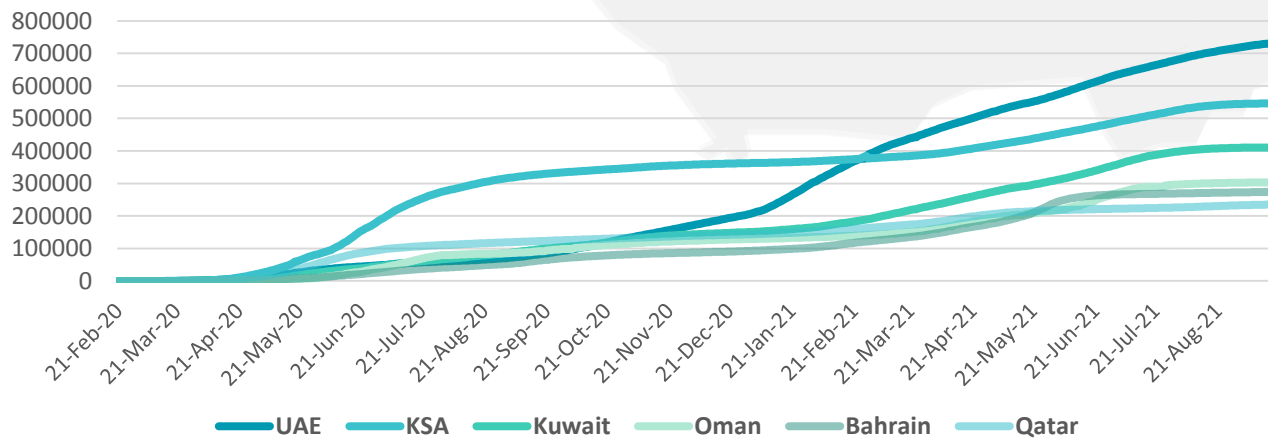
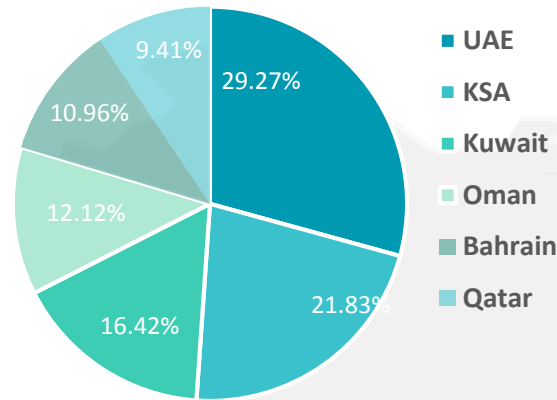
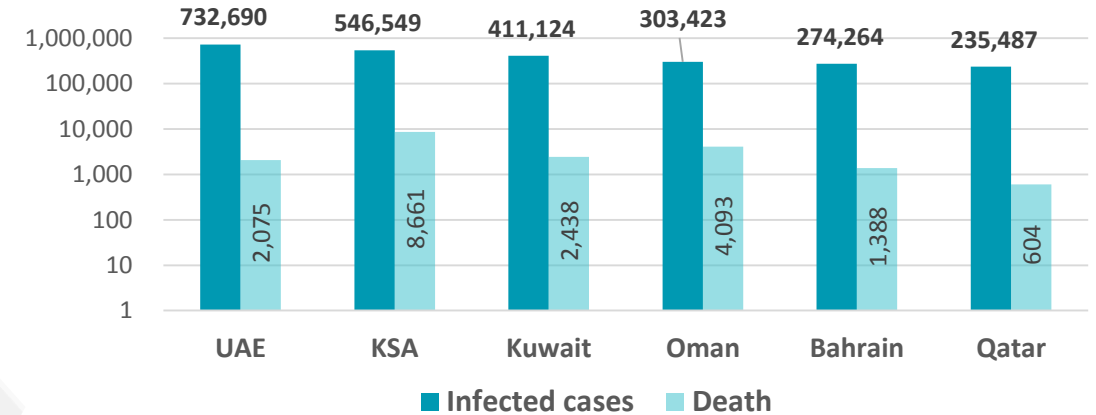


Figure 7: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION

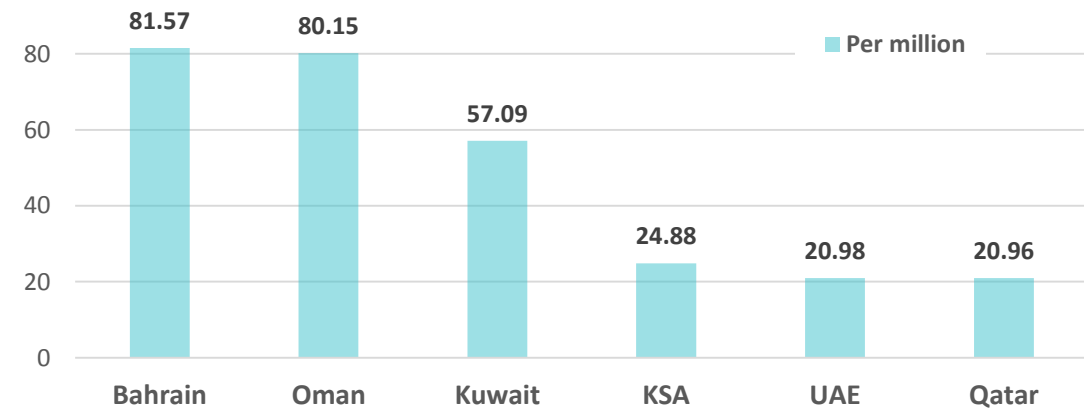




Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries

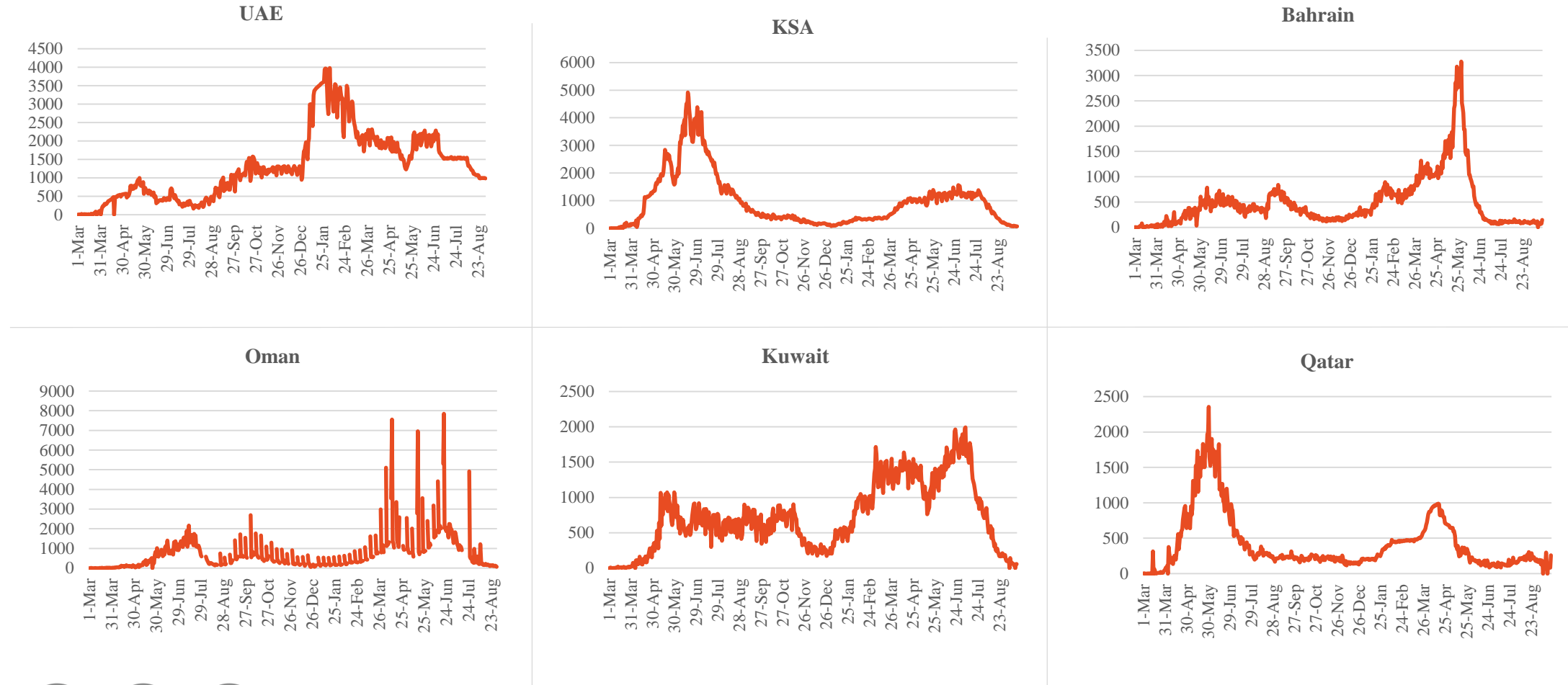
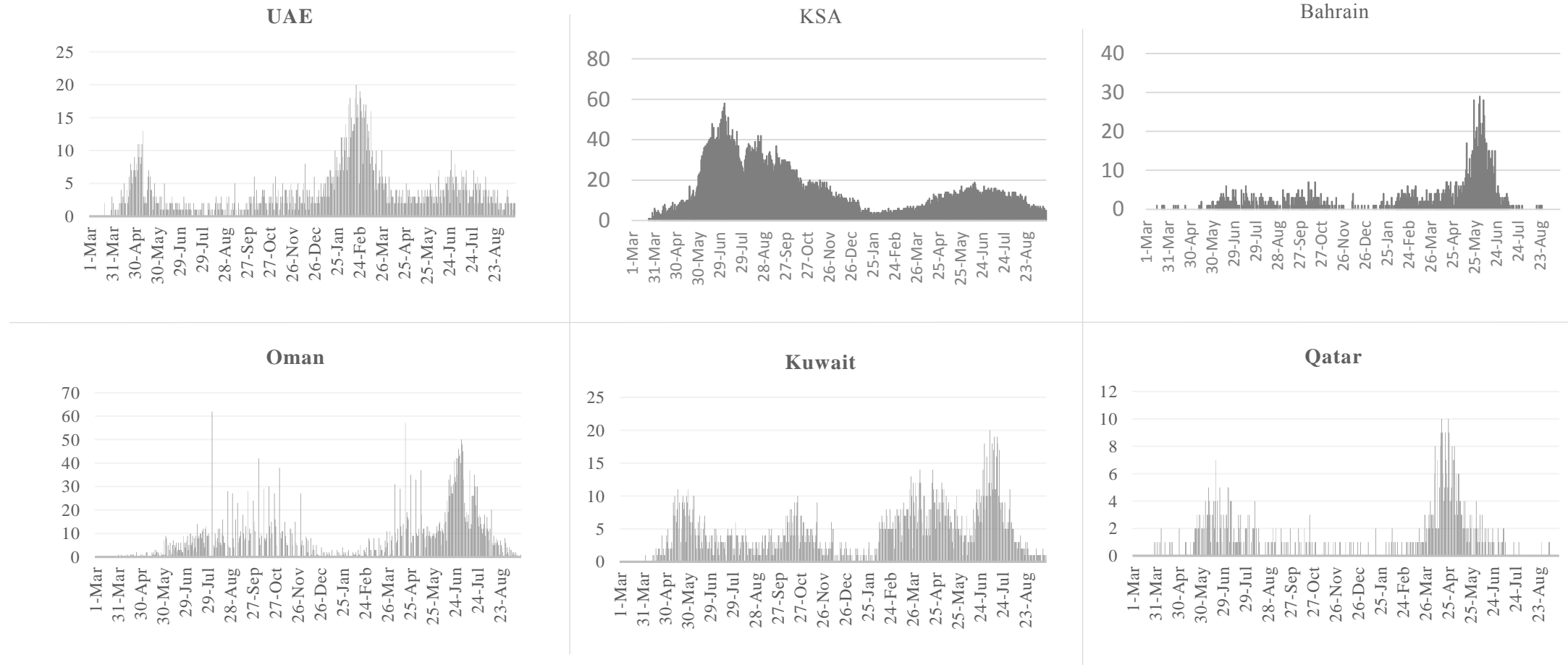




Figure 12: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries



Article 1

CDC's Response to COVID-19

Published

February 12, 2021 in [CDC](#)

Preparing First Responders, Healthcare Providers, and Health Systems

- Collecting information and offering recommendations about the vaccines.
- Working to detect and characterize new COVID-19 variants.
- Learning more about the short-long term health effects associated with COVID-19.
- Investigating multisystem inflammatory syndrome in children provides emergency risk management.

Advising Businesses, Communities, And Schools

- Released indicators to help school officials make decisions.
- Published a list of tips on how to make, clean; and wear masks.
- Created business guidance to help the public and private sectors protect essential workers

Sharing Knowledge

- COVID Data Tracker
- COVID-19 Science Update helps stay up to date on the latest COVID-19 research.
- COVID-NET program collects data.
- Morbidity and Mortality Weekly Report

Protecting the Health of Travelers and Communities:

- Issuing guidance, working with international federal state local and industry partners, and taking actions at the U.S. borders.
- Has created a web page for travelers
- Provides public health guidance



Article 2

Singapore's Health System Response to COVID-19 Pandemic

Published

September 16, 2020 in [THE BMJ](#)

Public Health Outbreak Containment Measures

Reducing Spread From Imported Cases

- Travelers and returnees undergo swab tests and serve a 14-day quarantine. Short-term visitors are not allowed entry.

Detecting and Isolating Cases Early

- Scaled up the Laboratory testing capacity, +800 Clinics were activated for potential cases.
- Close contacts were placed under quarantine and phone surveillance, and use Tracing application & Scan a code to check-in in public spaces.

Public Health Outbreak Containment Measures

Emphasizing and Supporting Social Responsibility

- Private insurers extended coverage for hospitalization due to COVID-19.
- The government has committed 60 billion SGD to help businesses stay viable & preserving jobs.
- The Quarantine Order Allowance Scheme allowed employees who were in quarantine to claim 100 SGD per day.
- Temporary Relief Fund and COVID-19 Support Grant helped low-to-middle-income Singaporean; 800 SGD monthly for 3 months for those who lost jobs.

Public Health Outbreak Containment Measures

Adaptation of Care and Surge Capacity

- Following the SARS outbreak, Singapore prioritized building a specialized center for outbreak management. A 330-bed purpose-built infectious diseases management facility, that could increase to 500 beds.
- Ensured adequate national stockpiles for up to 6 months. Avenues were explored to ensure sufficient facilities for treating patients.
- **Maintaining Core Health Service Capabilities:**
- Telemedicine services



Article 3

South Korea's Health System Response to COVID-19 Pandemic

Published

April 29, 2020 in [TANDE](#)

Early recognition and rapid activation of national response protocols

- The process of early recognition and the incubation period bought the government a time frame of 2 weeks maximum of preparation and awareness before the cases rose.

They developed two-track approach focused on:

1. The public health response in order to prevent and detect further infections.
2. The clinical response to manage infections..

Rapid establishment of widespread diagnostic facility

- Rapid expansion of testing relied on the rapid engagement of the private sector.

- The strategy of rapid testing scale-up. After the 100th case testing was increased from 1,581 to 11,290 per day.

Scale-up of measures for preventing community transmission

- Contact tracing was accomplished by a rapidly established temporary workforce of Epidemiological Intelligence Service (EIS) officers.

- Activated one triage center per district for any individuals with a fever or respiratory symptoms.

- Instituted a strict program of self-quarantine and contact tracing for all incoming travelers.

Redesigning the triage and treatment systems

- South Korea redesigned health service provision at the national level by creating Two systems for Covid-19 and Non-Covid-19

COVID-19 System:

- Included public quarantine, primary health care triage and admission for observation at the primary care level accommodation support

Non-COVID-19 system:

- Included diverting the flow of patients with non-COVID-19 conditions through triage centers at the district or hospital level.

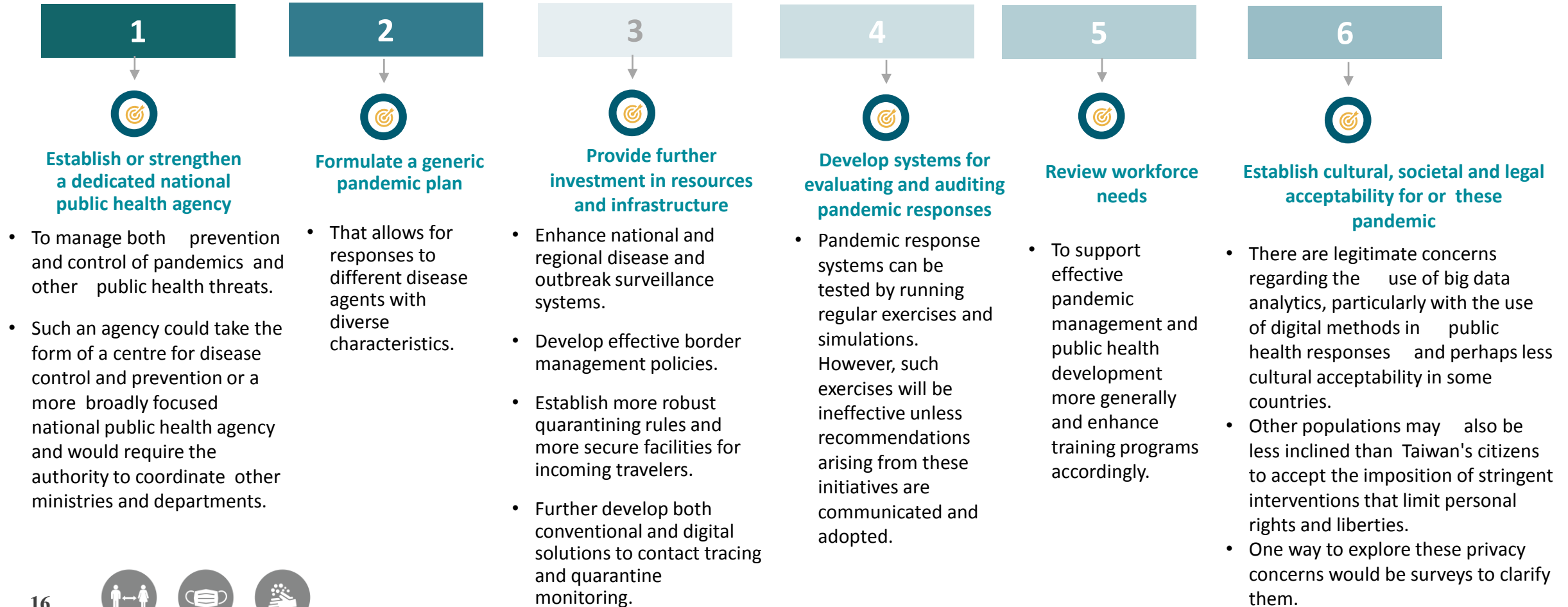


Article 4

Taiwan and New Zealand 's Potential Lessons From Health System Response to COVID-19

Published

October 21, 2020 in [THE LANCET](#)





Article 5

Published

July 27, 2021 in [Nature Immunology](#)

The COVID-19 Response in the United Arab Emirates: Challenges and Opportunities

- This article discusses UAE's accomplishment to report SARS-CoV-2 cases and their swift and decisive response to the pandemic.
- Effective public health measures were immediately implemented such as, activating an emergency response system, issuing guidance for risk communication with the public, building field hospitals and providing rapid drive-through PCR testing. The number of PCR tests conducted reached more than double the population in January 2021.
- Abu Dhabi Medical Devices Company, in collaboration with international entities, is providing more than 500 million syringes and needles for the COVID-19 vaccines, which is equivalent to 25% of UNICEF and COVAX's global need for 2021.
- Additionally, Abu Dhabi HOPE Consortium initiative brings together leading public and private industry partners, including the Department of Health - Abu Dhabi, Etihad Cargo, Abu Dhabi Ports Group, Rafed and SkyCell to facilitate the delivery of 18 billion vaccine doses around the world by the end of 2021.
- The HOPE Consortium has recently developed the largest "freezer farm" in the UAE, with a static capacity to hold 11.4 million vaccine doses at an ultra-cold temperature of -80°C .

Clinical Trials

Clinical Trials were launched for the first time in the UAE, including the 4 Humanity phase 3 trial with the inactivated SARS-CoV-2 vaccine in July 2020 and the Sputnik V-UAE phase 3 trial in January 2021. This challenge provided a golden opportunity for scientists to conduct high-quality research that spanned many fields, including epidemiology, diagnostics and therapeutics.



Article 6

Fostering Human Capital in the Gulf Cooperation Council Countries

Published

July 2020 in [RESEARCH GATE](#)



United Arab Emirates

- UAE Ministry of Health & Prevention stated that school buildings and buses were sterilized. Virtual classes were launched for schools and universities until the end of the academic year. UAE ranked the world's 10th best for treatment of coronavirus and first among Arab nations. Dubai Police Force used artificial intelligence to distinguish vehicles with movement permits during the lockdown. Hospitals adopted telemedicine services to help patients avoid the risk of infection and minimize the burden on the health care system. The government announced a 1.5 billion Emirati dirham stimulus package to reduce the cost of doing business and to simplify business procedures. Lastly, the government also extended expired residencies and visas until December 2020.



Saudi Arabia

- Saudi Arabia stopped all international flights, domestic flights and on-ground transportation. Public entry and praying at Great Mosque in Mecca and Prophet's Mosque in Medina was suspended. All prayers were to be conducted at home. MOH also established an e-Health strategy, and the King instructed that all COVID-19 patients should be treated for free. The government initiated a "Home Medicine Program" to deliver required medications to patients with chronic diseases. MOE instructed virtual schooling for students. The government announced a major wage subsidy program for Saudi citizens working in the private sector. Foreign workers can request delays and deferrals for electricity and rent payments.



Kuwait

- In Kuwait, curfew ran from 5 pm to 6 am from April to May 31st. Work was suspended across all ministries and government institutions, and all private health clinics and laboratories were also closed. All public transportation was suspended, and all public spaces were closed until further notice. The Ministry of Education (MOE) closed all schools, universities, and military colleges and executed eLearning. The government announced \$16.5 billion in lending to small and medium enterprises and decided to allocate 500 million Kuwaiti dinars to fight the pandemic. The Public Authority for Manpower launched "Khidma As'hal," which provides easier processes for registration and transfer of workers.



Continued



Qatar

- Qatar prepared residential buildings for quarantine and people were cautioned to avoid social gatherings. In March, MOPH activated remote access channels for health care services. Non-emergency health services at private health facilities were suspended. Health care centres were designated as the treatment facility, screening, testing, and quarantining COVID-19 patients. MOE issued a remote learning plan for students. The government announced that employers would pay full salaries to foreign employees in quarantine or under treatment.



Bahrain

- Bahrain closed all theatres, gyms, public swimming pools, and theme parks; and designated the Bahrain International Exhibition & Convention Centre as the main testing centre for COVID-19. Ministry of Health collected samples through mobile screening units. 'Be Aware' application of COVID-19 nearby active cases was released on Apple and Google Play stores. In April, electronic waterproof wristbands were distributed to monitor individuals under home quarantine. All schools, universities, and nurseries began televising virtual classes. The government unveiled an \$11.4 billion stimulus package to support the economy and spent US\$570 million to pay salaries of Bahraini employees in the private sector.



Oman

- Government of Oman carried out airport screening, set systems for isolation and surveillance of symptomatic traveller arrivals. All retail outlets were instructed to install sanitizers. Treatment services provided for routine nonemergency medical cases were temporarily suspended. MOH began using plasma from recovered COVID-19 patients to treat critically ill patients in the Royal Hospital. Supreme Committee directed to reduce the number of employees present in the government sector to 30 percent. MOE suspended educational activities at the governorate or school level until further notice. Oman's Ministry of Manpower issued guidelines to employers to pay staff their wages in full during unprecedented times.

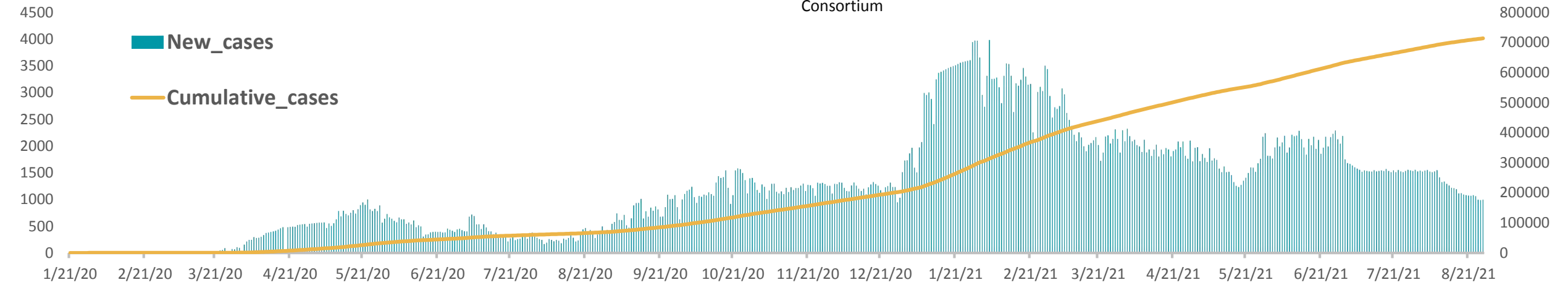
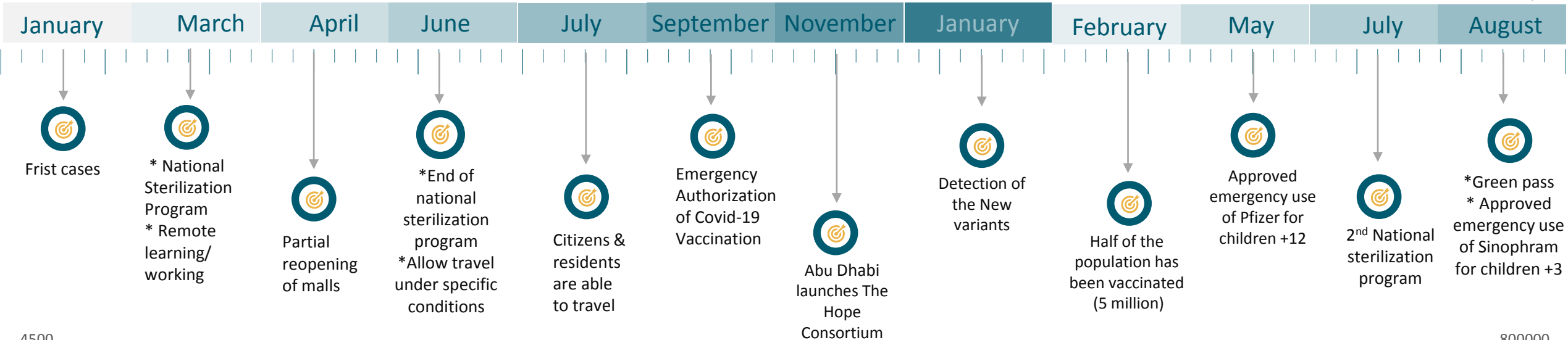




United Arab Emirates COVID-19 Public Health Response

2020

2021



20



Article 7

Published

July 31, 2021 in [OXFORD ACADEMIC](#)

COVID-19 Preparedness and Response Plans from 106 Countries: A Review From a Health Systems Resilience Perspective

When planning any emergencies in the future, the national authorities and their partners, must critically consider the following:

1

Specific considerations for the maintenance of quality, routine and essential, health services within emergency preparedness and response plans and activities.

2

Dedicated participation of entities and persons responsible for health systems strengthening in emergency management and operations are largely necessary and reactive.

3

Planning should address prevailing gaps in health service delivery between national and subnational levels due to variability in investment and public health infrastructure to ensure protection of population.

4

Consideration of domains of quality and safety in health services is necessary to ensure improved community engagement, trust and utilization of essential health services.

5

Planning frontline activities for maintaining essential health services should have proportionate considerations and M&E indicators that will track the maintenance of essential health services alongside emergency-specific healthcare.

6

An integrated approach to planning should be pursued as health systems recover from COVID-19 disruption.



Continued

National COVID-19 Research Committee

In March 2020, the Federal Ministry of Health and Prevention, Department of Health - Abu Dhabi (ADPHC), and Dubai Health Authority launched National Covid-19 Research Committee that aimed to enable research collaboration between health care professionals, academics and pharmaceutical companies and to expedite COVID-19 research and translate it into policy and public health response.

Establishing the National Institutional Review Board (IRB) for COVID-19 research

A registry was also developed to provide the IRB status of all COVID-19 research at the national level, aiming to consolidate the efforts, avoid unnecessary duplications and identify priority research gaps that are important to guide policies and response efforts. While the registry was presenting the IRB status of local research activities, the ADPHC scientific report was capturing published and unpublished UAE research activity in addition to other international breakthrough articles daily from February 2020.

Seroprevalence Study

The largest population-based cross-sectional seroprevalence study in the UAE was conducted in July 2020 with over 13,000 participants. The study revealed a low seroprevalence among residents of households in the Emirate of Abu Dhabi and substantially higher seroprevalence in labor camps, reflecting the high efficiency which SARS-CoV-2 spreads in crowded work settings. Furthermore, genomic surveillance and phylogenetic analysis studies revealed multiple introductions of SARS-CoV-2 into UAE. Another study utilized the detection and quantification of SARS-CoV-2 RNA in wastewater and treated effluents to monitor and track the extent of viral spread at the community level. The findings of this double-blind phase 3 multicenter clinical trial assessed the efficacy of inactivated SARS-CoV-2 vaccine, demonstrated its safety profile, and its ability to reduce the risk of symptomatic COVID-19. Additionally, the results of the Sputnik V-UAE phase 3 trial are expected to be published soon.





Article 8

Multistakeholder Participation in Disaster Management—The Case of the COVID-19 Pandemic

Published

February 13, 2021 in [NCBI](#)

Multi-stakeholder collaboration may improve service delivery and participation at international, national, regional Levels. The spatial decision support system (SDSS) is a computer-based information system designed to support policymakers and practitioners in the decision. In this context, SDSS offers a platform for the interaction of public health officials, affected actors, and first responders to improve estimations of disease propagation and the likelihood of new outbreaks.

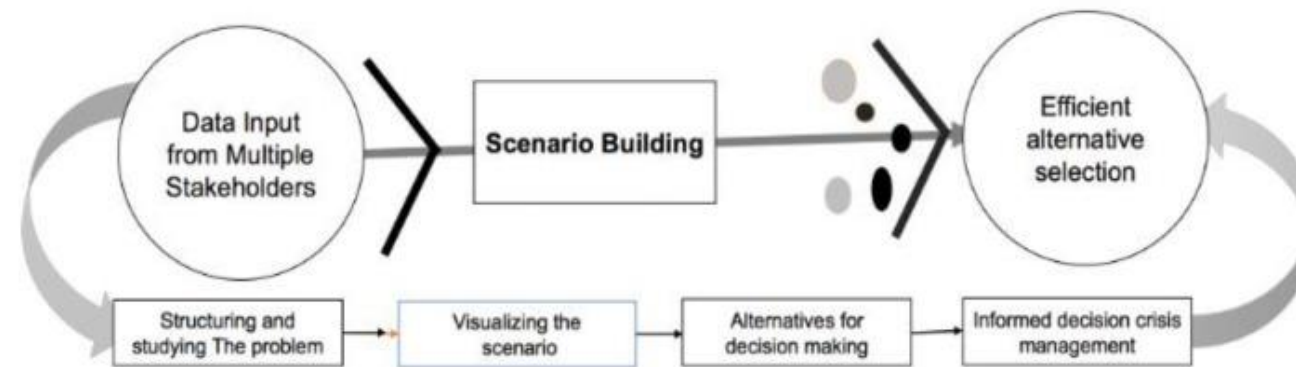


Figure 1: Conceptual design of Multi-Stakeholder Spatial Decision Support System (MS-SDSS).

Lessons learned from different countries involve the strengthening of crisis management and response strategies:

1

Health departments should concentrate on the robust collection of health data and epidemiological databases (for health policies and to ensure public health surveillance).

2

Government should focus on the impact of sudden job losses and depletion of income due to COVID-19 and acute hardships.

3

Governments should focus on providing authoritative information via multiple sources to ensure accurate data, to slow the spread so that our health systems are not over-stressed.

4

Understanding that extensive testing of symptomatic and asymptomatic cases early and proactive tracing of potential positives is very important.



Article 9 Recommendations for Improving Pandemic Preparedness and Management

Published

November, 2020 in [European Commission](#)

Recommendation 1 – Prevent and Pre-empt

- **Support multifaceted efforts** to investigate, map and reduce the risk of emerging infectious diseases globally.
- **Support a combination of complementary approaches** for accelerating the research.
- **Strengthen multi- and cross-disciplinary research** on pandemic prevention, preparedness, responses and impacts.

Recommendation 2 – Enhance Coordination Across Member States and at the International Level

- Establish a standing EU advisory body for health threats and crises, including epidemics and pandemics.
- **Ensure that monitoring efforts are comprehensive**, evidence-based, rapidly shared and well-coordinated across the EU, enabling strategic decisions in response to the situation at hand.
- **Establish a joint early-response mechanism to contain epidemics and pandemics, including a toolbox of strategies**, such as testing, tracing, isolating as well as local/regional/national containment measures.
- **Coordinate research and the development and implementation of medical countermeasures during a pandemic or other health threat.**
- **Coordinate research and the development and evaluation of social measures to mitigate harm and to increase resilience in case of pandemics or other public health crises.**

Recommendation 3 - Strengthen Systems for Preparedness and Management

- **Encourage Member States to provide healthcare for all.**
- **Ensure robust and equitable access to critical products and services for all EU citizens and demonstrate global solidarity.**
- **Encourage Member States to strengthen public health infrastructure as an essential part of efficient and equitable health services. Establish systems for effective risk communication and tackling disinformation and misinformation during crises.**
- **Together with EU Member States, develop strategies to sustain education in all sectors. Encourage Member States to strengthen efforts in community involvement and organization and support civil society organizations.**
- **Foster the exploitation of the possibilities of appropriate engineering and other controls in public buildings** to limit infection risk indoors for air borne diseases.

Recommendation 4 – Uphold Fundamental Rights and Strengthen Social Justice

- Uphold highest standards in the protection of fundamental rights and civil liberties during pandemics.
- **Implement the European Pillar of Social Rights** by extending social security benefits to workers in non-standard and precarious employment and updating policies towards an appropriate acknowledgement of the value of care work.

Recommendation 5 – Find Solidarity-based and Sustainable Ways of Living

- Take action in a cross-cutting manner upon the increasing body of knowledge about unsustainable ways of living.



Article 10

A pandemic recap: lessons we have learned

Published

September 10, 2021 in [Pubmed](#)

On January 2020, the WHO Director General declared that the outbreak constitutes a Public Health Emergency of International Concern. This paper represents a white paper concerning the tough lessons learned from the COVID-19 pandemic from a group of international and heterogenous multidisciplinary panel of very differentiated people of those responsible for future healthcare decision making.

- 1) **To build resilient health care systems** - The most important element of pandemic preparedness is a resilient health system to rapidly detect, assess, report, and respond to novel outbreaks.
- 2) **To invest in vaccination diffusion and protocols**- Maximizing the vaccination diffusion and vaccine accessibility is of utmost importance whatever the cost. It is fundamental to adhere to unequivocal communication about the benefits of broad vaccination campaigns and guarantee the most transparent and comprehensible information about funding, production, testing and study results in order to counteract the misinformation on vaccination.
- 3) **To defend the integrity of science** - Scientific progress and the presence of great researchers enabled societies to quickly understand the virus, its modes of transmission, and implement most effective public health interventions. The willingness to acquire a scientific leading role, and the emergent need of research stressed the efficacy of the peer review process, leading to the regrettable retraction of some papers.
- 4) **To abolish rhetoric and adhere to truth** – In starting a trustworthy dialogue and counselling with a person, it is fundamental to adhere to intellectual honesty, clearness and empathy, avoiding paternalism, rhetoric and sensationalism.



A pandemic recap: lessons we have learned

Continued

- 5) **To focus on equity** - COVID-19 amplified long-standing systemic inequalities, including access to health care. International organizations must prepare an action plan to moderate disparities and increase the access to health support , starting from prevention.
- 6) **To look at health care from a global perspective** - Healthcare facilities, structures and tools distribution from high-income systems to lower ones must be promoted together adequate and proportional growth in infrastructure.
- 7) **To support “One globe one health” approach** – It is of outmost importance to strengthen the foundations of an ecology of health, focusing on the interdependencies between the functioning of ecosystems, sociocultural practices and the health of human, animal and plant populations taken together.
- 8) **To make digital health technologies a channel for delivering primary health care** – Building more robust telemedicine systems in hospitals and communities worldwide is becoming very important for the digital Medicine.
- 9) **To protect healthcare workers** - They must have been better protected. The importance of effective team dynamics and nontechnical skills training and predefined processes and protocols should be highlighted and implemented for facing future crisis.
- 10) **To be prepared for mass casualties during pandemic** -The first step is to understand which basic level of care is not negotiable, along with the resources needed to maintain it. Second, to shift the decisional chain from a unidirectional one, to an interactive one, where administrators/ stakeholders and health professionals are used to reciprocal interactions and exchange of information, leading to responsible and accomplished decisions.



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