



SCIENTIFIC RESEARCH MONITORING ON COVID-19

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SCIENTIFIC RESEARCH MONITORING ON COVID-19

(Issue 438)

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Abu Dhabi Public Health Center (ADPHC) is gathering the latest scientific research updates and trends on coronavirus disease (COVID-19) in a monthly 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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COVID-19 impact on research, lessons learned from COVID-19 research, implications for pediatric research

Clinical research during the COVID-19 pandemic: The role of virtual visits and digital approaches

The Role of Clinical Researchers During COVID-19: Balancing Individual, Scientific, and Social Benefits of Research





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

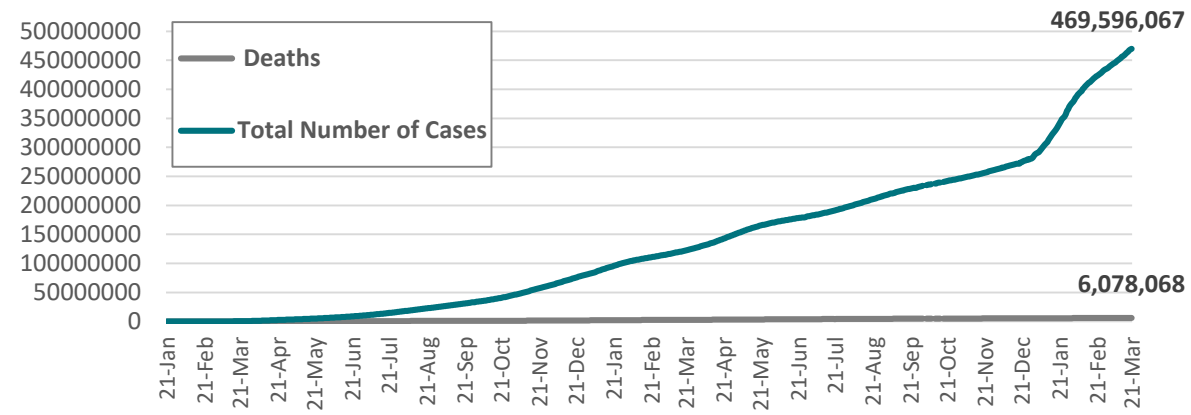
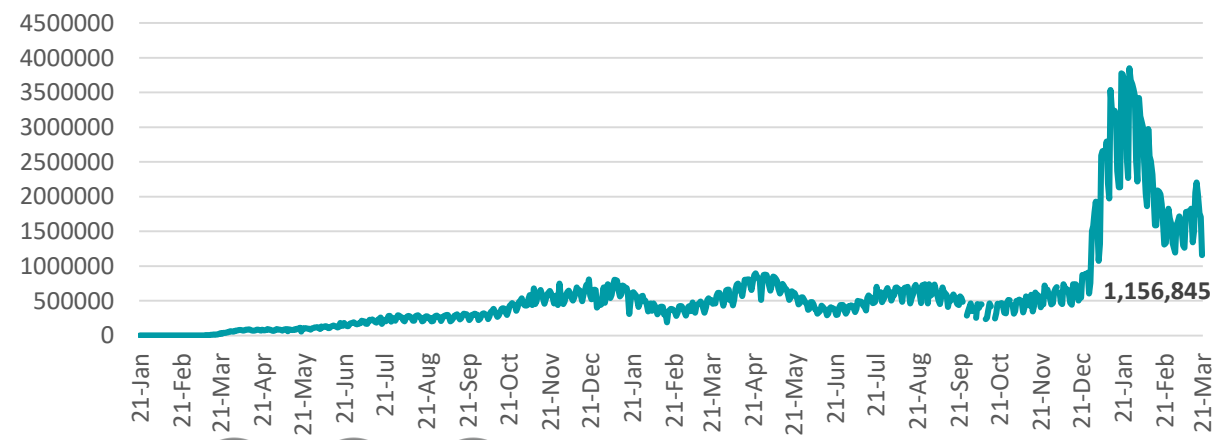


Figure 2: Daily New Infected COVID-19 Cases



4

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

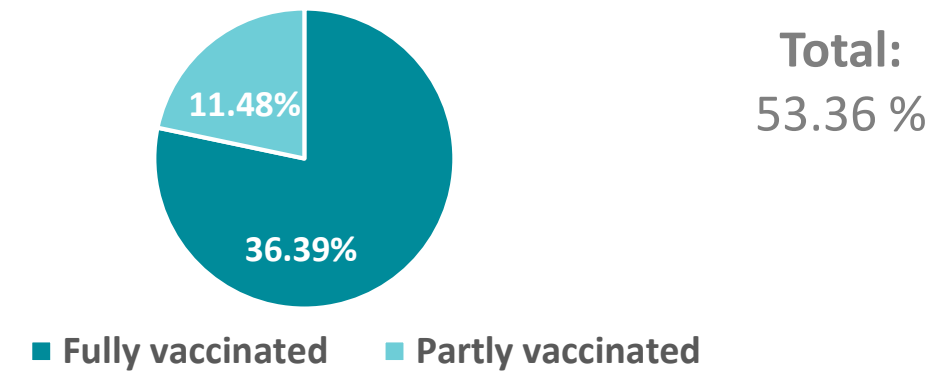


Figure 4: Global Daily New Deaths Due to COVID-19

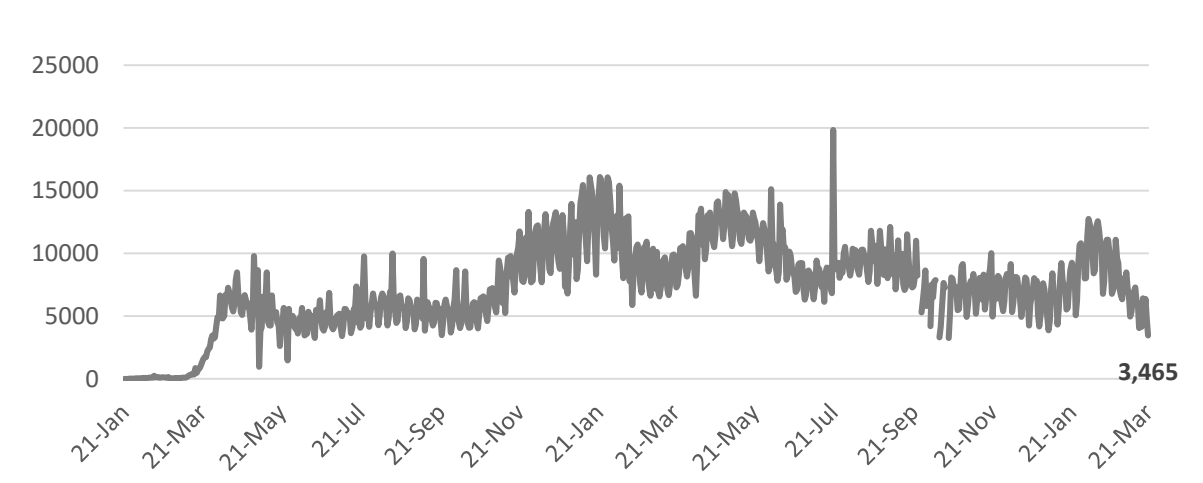
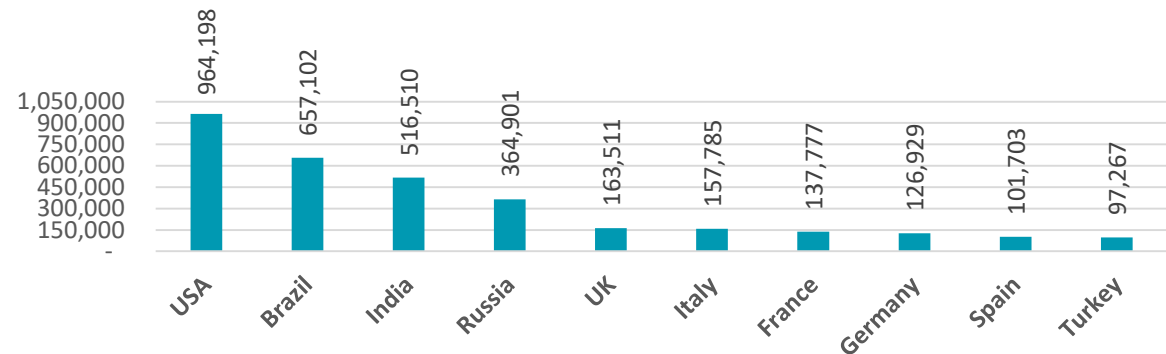
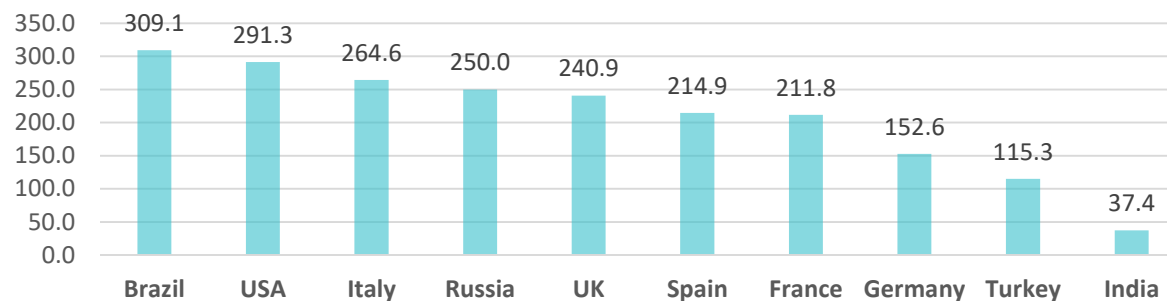


Figure 5: Top 10 Countries in the Total Number of Cases Due to COVID-19

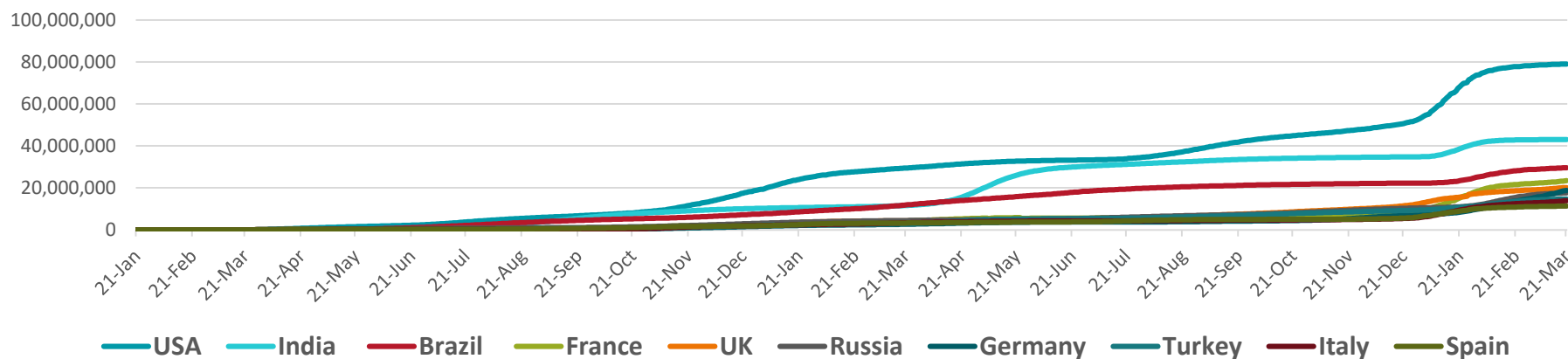
TOTAL DEATHS



DEATHS PER MILLION



TOTAL INFECTED CASES



USA	78,999,760
India	43,009,390
Brazil	29,617,266
France	23,417,844
UK	20,093,766
Germany	18,772,331
Russia	17,611,401
Turkey	14,693,026
Italy	13,861,743
Spain	11,324,637





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

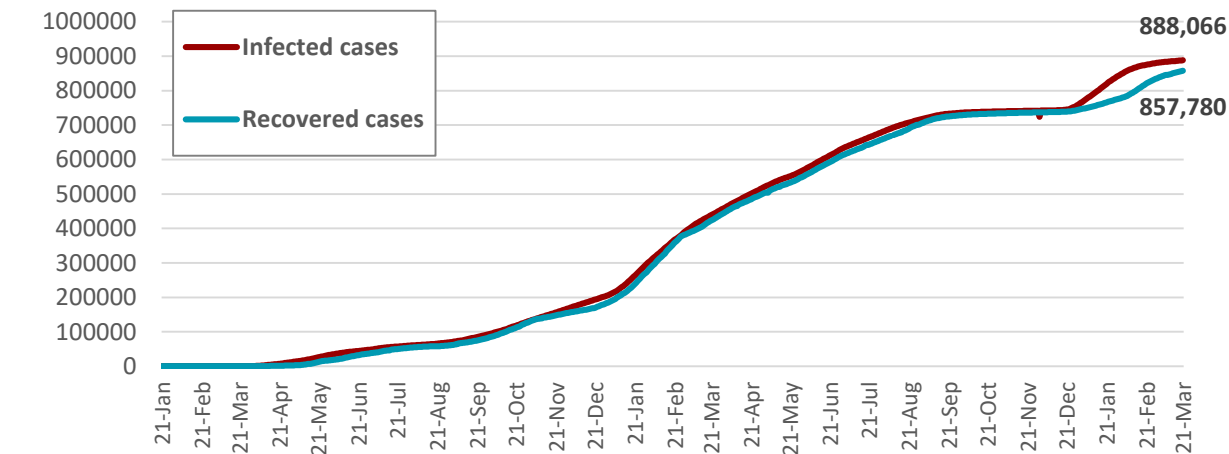


Figure 6 B: TOTAL NUMBER and Percentage of UAE population Vaccinated

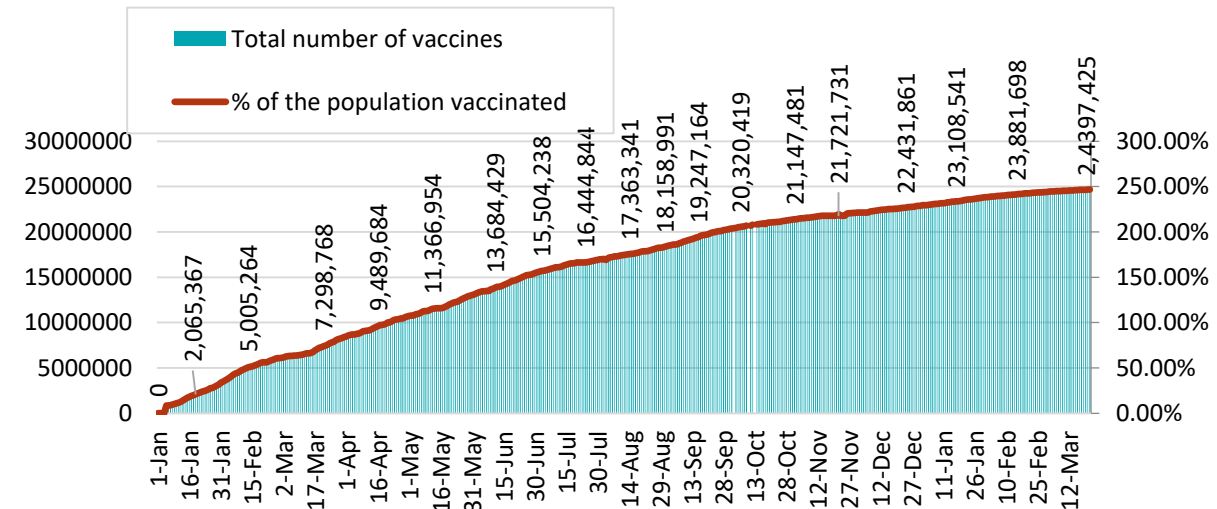




Figure 7A : **Global Distribution of COVID-19 Cases**

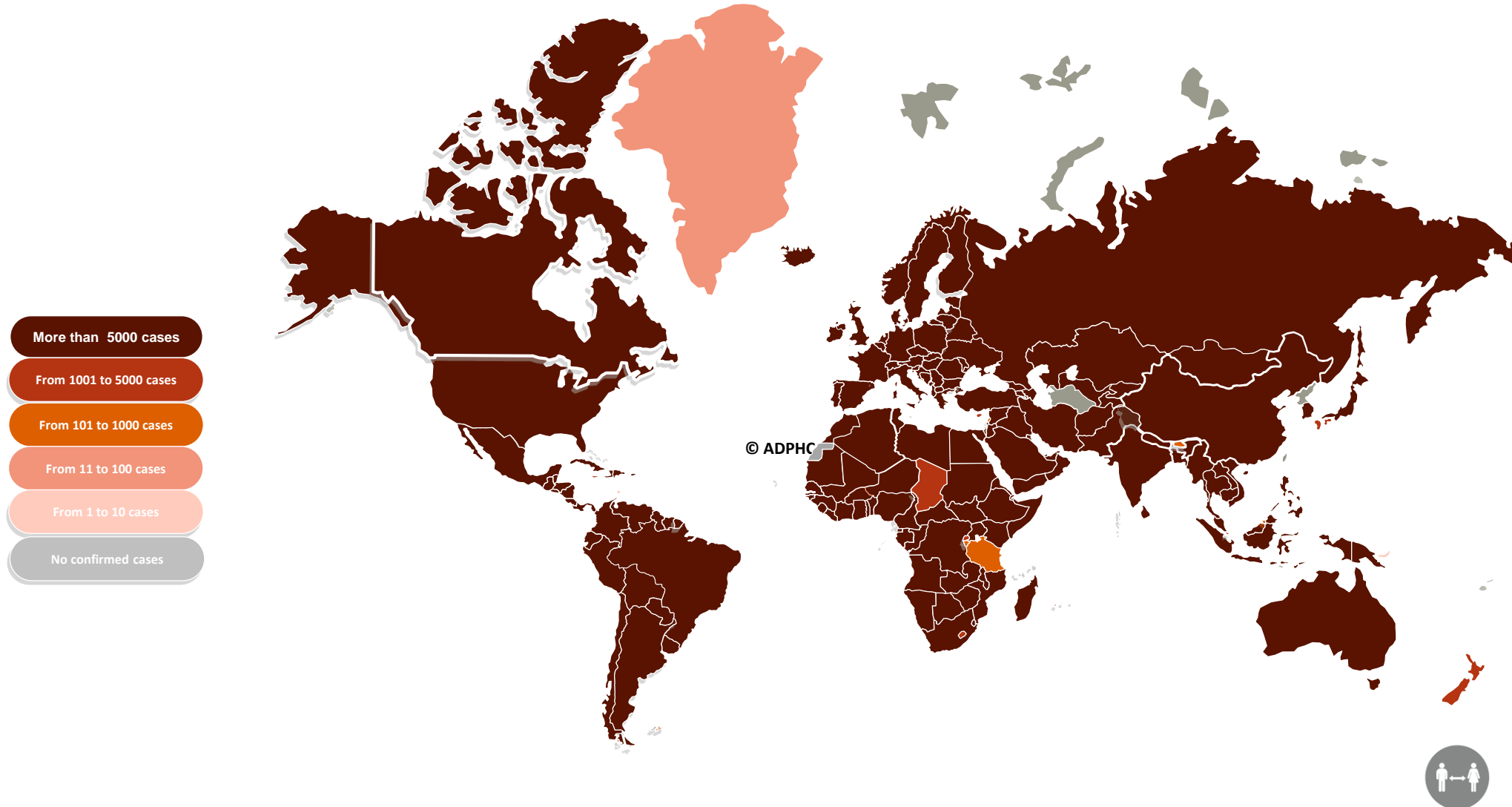
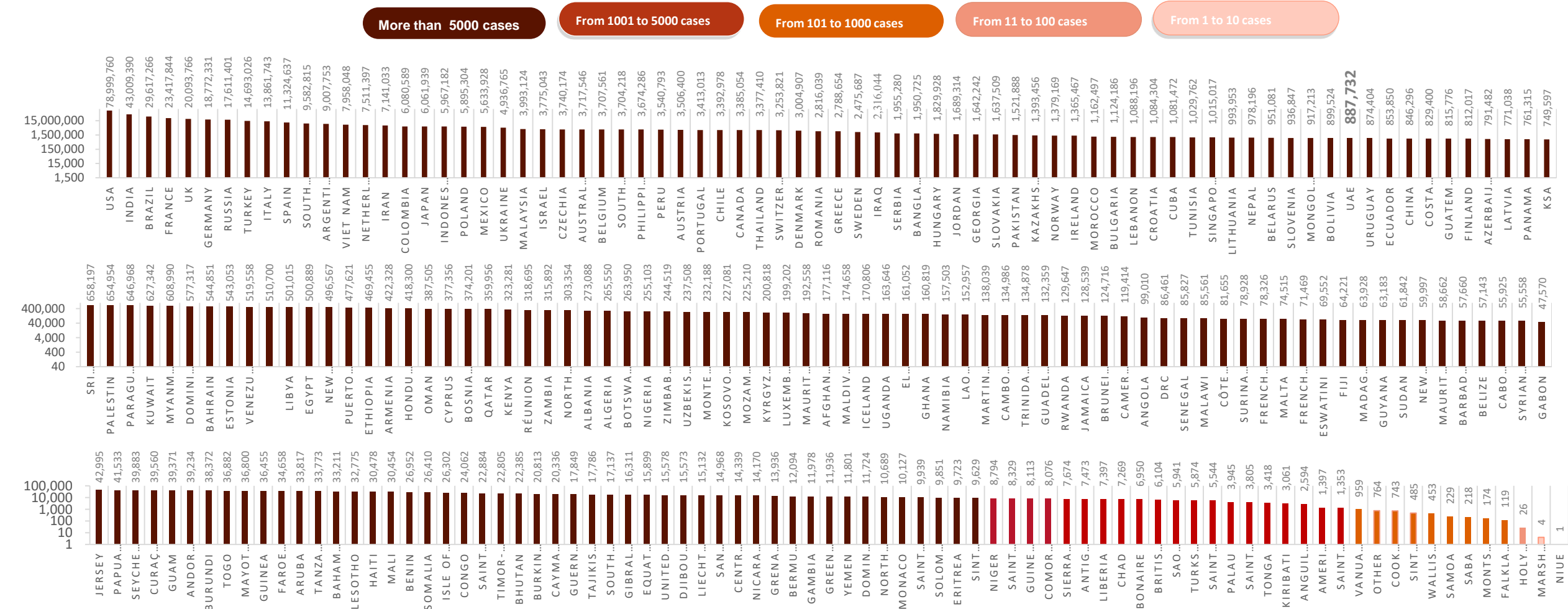




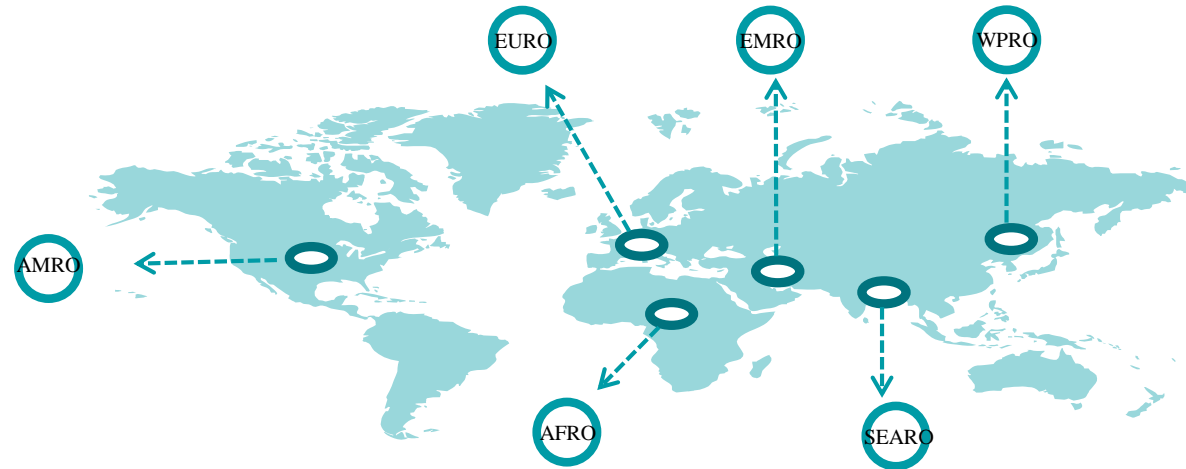
Figure 7B: Bar Chart Illustrates the Global Distribution of COVID19 Cases



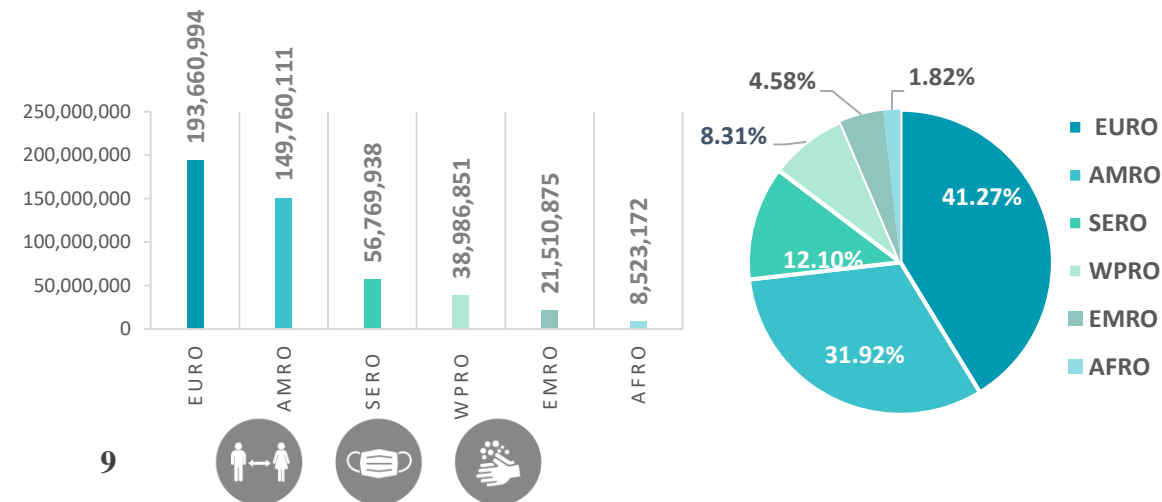
Other*: includes cases and deaths reported under the international conveyance(Diamond Princess)



Figure 8: Global Distribution of COVID-19 Cases per Region



INFECTED



DEATHS

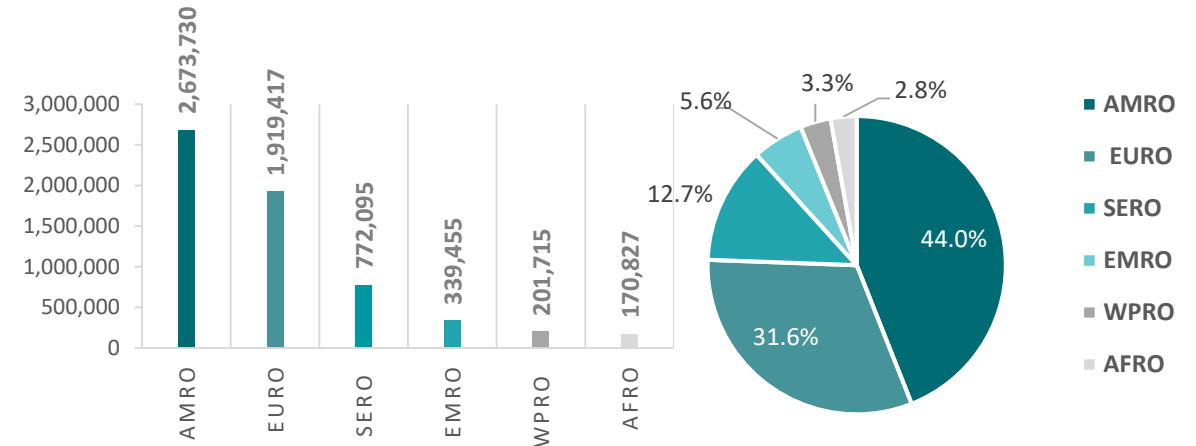
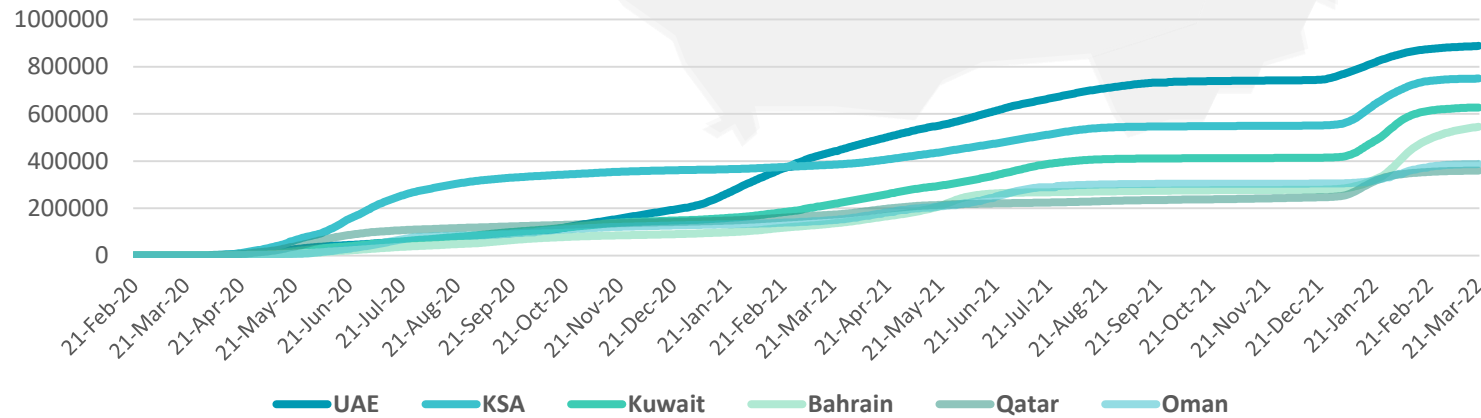
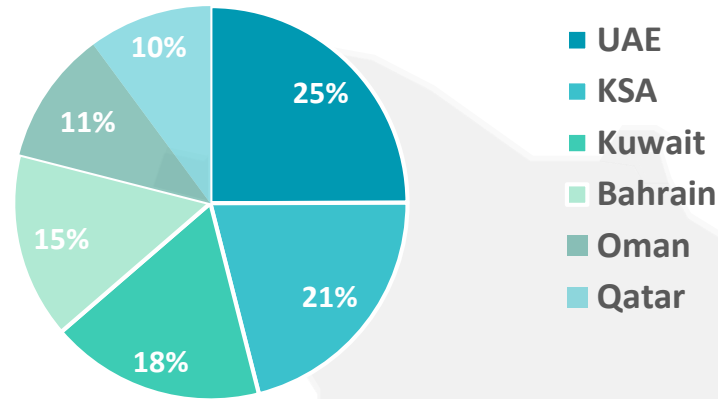
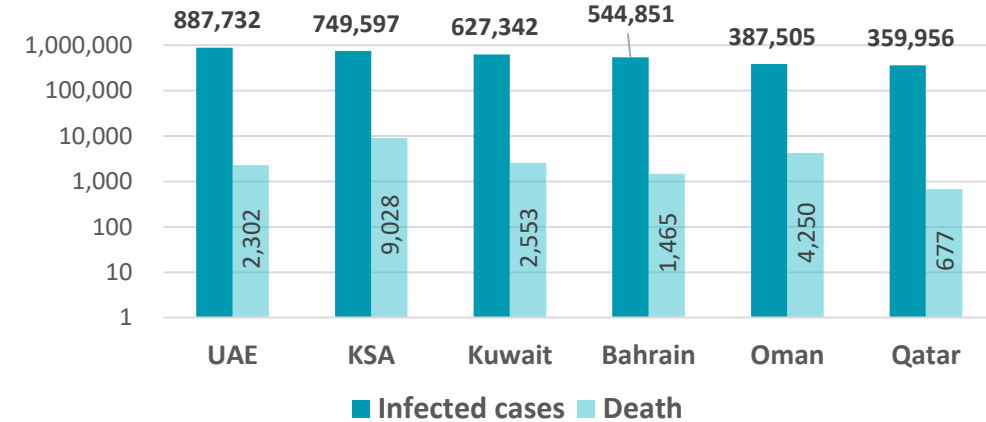


Figure 9: Comparative Analysis of the Distribution of COVID-19 Cases in GCC Countries

TOTAL NUMBER OF INFECTED CASES



TOTAL NUMBER OF INFECTED, RECOVERED AND DEATHS



DEATHS PER MILLION

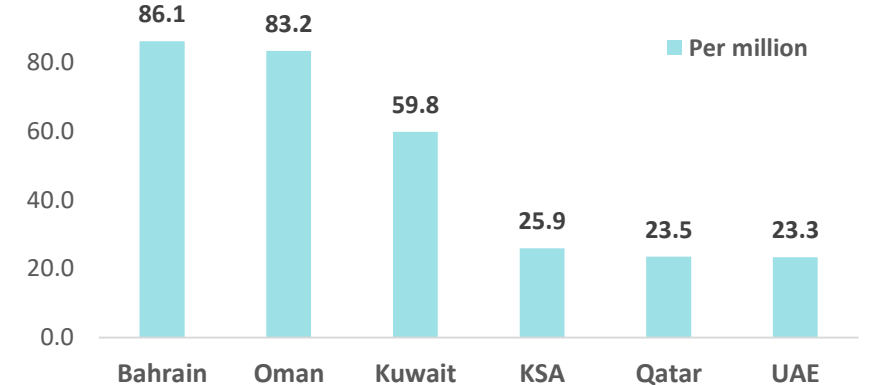




Figure 10: Comparative Analysis of the Distribution of COVID-19 New Cases in GCC Countries

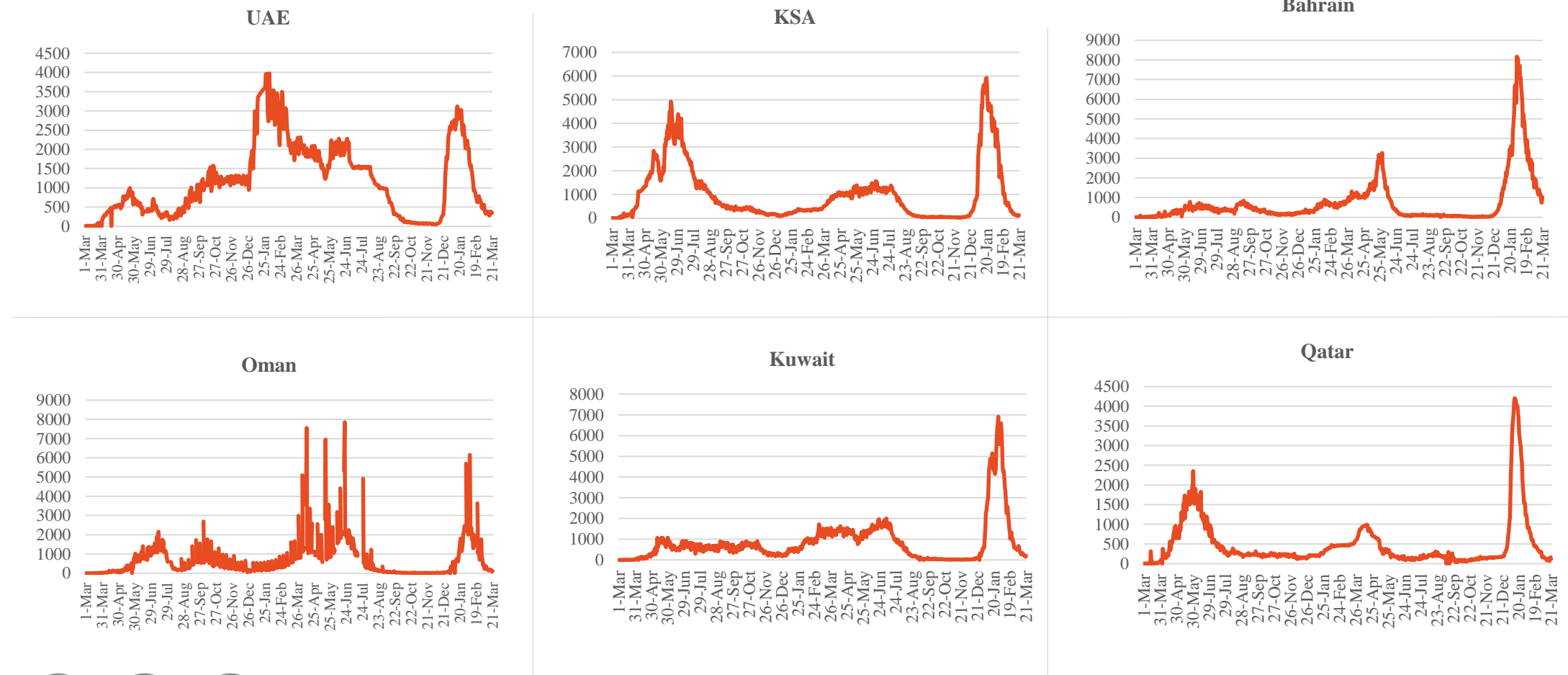
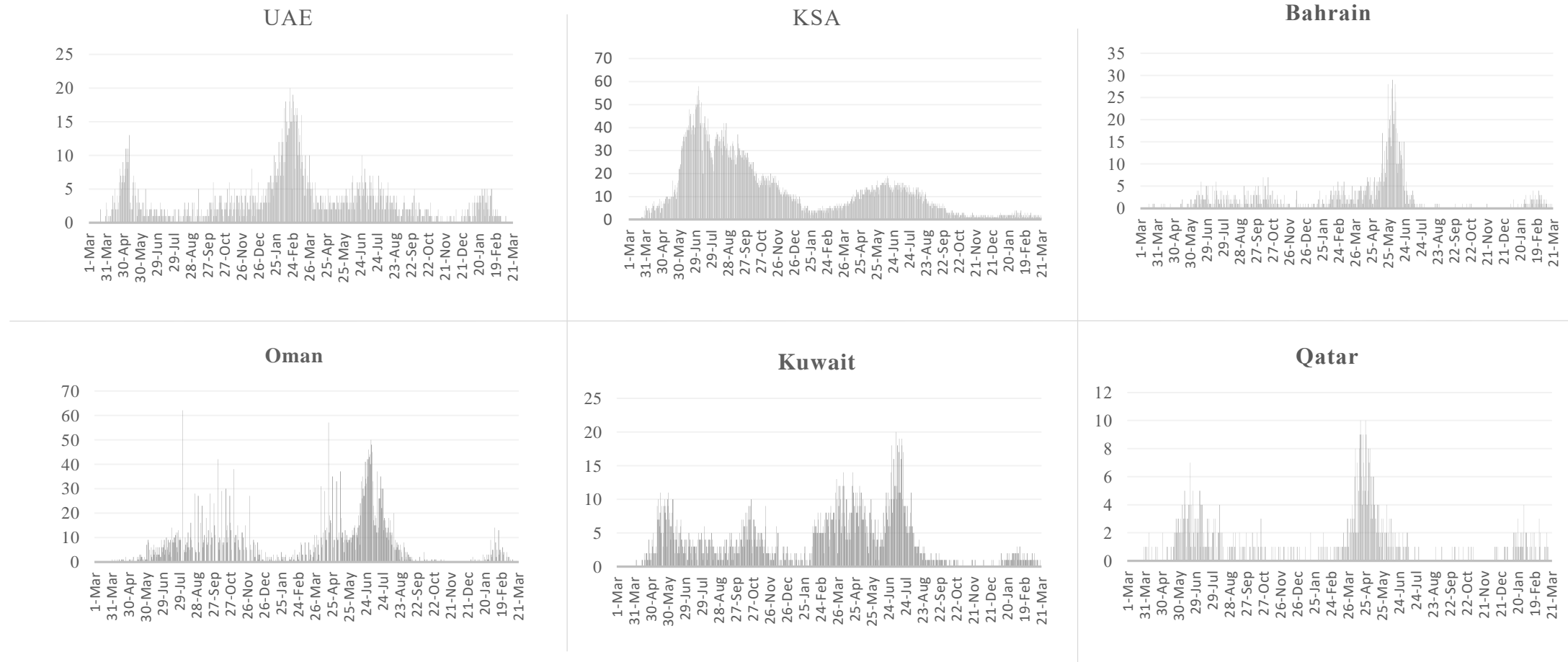


Figure 11: Comparative Analysis of the Distribution of COVID-19 New Death Cases in GCC Countries



Article 1

COVID-19 impact on research, lessons learned from COVID-19 research, implications for pediatric research

Published

June 16, 2020 in [Nature](#)

- This article published in Pediatric Research discusses the importance of recognizing and addressing opportunities and strategies for, and challenges of research and strengthening the pediatrician-scientist workforce as we navigate through and beyond this pandemic, which will have a long-lasting impact on our world, including research and the biomedical research enterprise.
- Impact of COVID-19 on ongoing research
- The impact on research in progress prior to COVID-19 was rapid, dramatic, and no doubt will be long term. The pandemic curtailed most academic, industry, and government basic science and clinical research, or redirected research to COVID-19. In addition to short- and long-term patient impact, these research disruptions threaten the careers of physician-scientists, many of whom have had to shift efforts from research to patient care.
- To protect research in progress, as well as physician-scientist careers and the research workforce, ongoing support is critical. Support throughout and beyond the pandemic to retain currently well-trained research personnel and research support teams, and to accommodate loss of research assets, including laboratory supplies and study participants, will be required to complete disrupted research and ultimately enable new research.

- In the long term, it is likely that the pandemic will force reallocation of budgets at the expense of research areas funded prior to the pandemic. It will be more important than ever for the pediatric research community to engage in discussion and decisions regarding prioritization of funding goals for dedicated pediatric research and meaningful inclusion of children in studies.

COVID-19 research

- This global pandemic once again highlights the importance of research, stable research infrastructure, and funding for public health emergency (PHE)/disaster preparedness, response, and resiliency. The stakes in this worldwide pandemic have never been higher as lives are lost, economies falter, and life has radically changed.
- While the highest priority goals are treatment and prevention, biomedical research also provides data critical to manage and restore economic and social welfare.
- Scientific and technological knowledge and resources have never been greater and have been leveraged globally to perform COVID-19 research at warp speed. The number of studies related to COVID-19 increases daily, the scope and magnitude of engagement is stunning, and the extent of global collaboration unprecedented.
- The pandemic has intensified research challenges. Long-term, lessons learned from research during this pandemic could benefit the research enterprise worldwide beyond the pandemic and during other PHE/disasters with strategies for balancing multiple novel approaches and high-quality, time-efficient, cost-effective research.



Continued

- Pediatric considerations and challenges related to treatment and vaccine research for COVID-19 include appropriate dosing, pediatric formulation, and pediatric specific short- and long-term effectiveness and safety.
- Childhood mental health in this demographic, already struggling with a mental health pandemic prior to COVID-19, is now further challenged by social disruption, food and housing insecurity, loss of loved ones, isolation from friends and family, and exposure to an infodemic of pandemic-related information. Understanding **factors that mitigate and worsen psychiatric symptoms** should be a focus of research, and ideally will result in strategies for prevention and management in the long term, including beyond this pandemic.
- **Social well-being of children must also be studied.** Experts note that the pandemic is a perfect storm for child maltreatment given that vulnerable families are now socially isolated, facing unemployment, and stressed, and that children are not under the watch of mandated reporters in schools, daycare, and primary care.. Many states in the USA have observed a decrease in child abuse reports and an increase in severity of emergency department abuse cases. In the short term and long term, it will be important **to study the impact of access to care, missed care, and disrupted education during COVID-19 on physical and cognitive development.**

Workforce Development

- Training and supporting pediatrician-scientists, such as through NIH physician-scientist research training and career development programs. at all stages of career, as well as fostering research for fellows, residents, and medical students willing to dedicate their research career to, or at least understand implications of their research for, PHE/disasters is important for having an ongoing, as well as a just-in-time surge pediatric-focused PHE/disaster workforce

Conclusion

The impact of the COVID-19 pandemic on research and research in response to the pandemic once again highlights the importance of research, challenges of research particularly during PHE/disasters, and opportunities and resources for making research more efficient and cost effective.

New paradigms and models for research will hopefully emerge from this pandemic. The importance of building sustained PHE/disaster research infrastructure and a research workforce that includes training and funding for pediatrician-scientists and integrates the pediatrician research workforce into high-quality research across demographics, supports the pediatrician-scientist workforce and pipeline, and benefits society.



Article 2

Clinical research during the COVID-19 pandemic: The role of virtual visits and digital approaches

Published

March 08, 2021 at [NCBI](#)

- Clinical trials are fundamental to determine the efficacy and safety of an intervention. This study aims to present the development of virtual visits and related methods for several critical clinical research activities. Also, to highlight important considerations associated with virtual approaches. This was conducted through a CTSA-wide survey on the authors experience in navigating the challenges.
- Study Coordination and Conduct**
- Assessments and Biomarkers** Face-to-face visits were transitioned to virtual visits to ensure patient safety without affecting study integrity. Many researchers were familiar with this approach and many participants were utilizing wearable devices to assess patient's vital signs, physical activities, sleep patterns and falls; even though it was not part of the original design. Other patients did not have such devices where the providers entered them manually into the case report forms. Data security, privacy, and participant trust issues must also be addressed. Pandemic will likely accelerate the use of such digital measures.
- Laboratory issues** Some sites deployed their local home health agencies to collect laboratory tests and returned to the participating site for analysis.
- Drug Management** This was a challenge. Study drugs were delivered through research staff, medical delivery services, curbside or valet medication pickup, mail, or home health for parenteral medications. All alternative methods required IRB approval. It was challenging to monitor participants closely.
- Study Remuneration** was not changed. Though, payment was done through a secure online payment systems. Any change to a different methods would require IRB approval.
- Study Monitoring** EPIC HER was facilitated to monitor the patient remotely. Any other in-person monitoring was provided by the on-site staff. This was very successful.
- Regulatory Issues and Compliance Audits**
- Two of the CTSA survey sites identified institutional policy or regulatory legal issues as barriers to using virtual approaches; including acquiring consent, HER data validations, and other security, privacy, ethics concerns. FDA and MHRA regulatory agency guided researches for a some regulatory flexibility, though cost and confidentiality should be taken into consideration.
- Resource Consideration** More than half participants encountered virtual visit.
- Communications** Specific populations (Black, Hispanic), access, and digital divide were challenging.
- Videoconferencing** Security, encrypted and configurable videoconferencing were challenging for both researchers and participants. The Office of Civil Rights offers a more flexible approach through FaceTime, Skype or Google Hangouts.
- Network Access** It was challenging to gain VPN to access remote desktop. Also, in some institutes, VPNs were not available.
- Lessons Learned** Adoption of technology systems are crucial, including clinical platforms or virtual approaches. Coordination and collaboration is essential for a successful transition to virtual approach. Challenges in obtaining laboratory and physiologic tests In the positive side, this enhanced the rapport between many parties. Four best practices for academic health centers ensures a successful transition to virtual clinical research is seen in the below Table



Article 3

The Role of Clinical Researchers During COVID-19: Balancing Individual, Scientific, and Social Benefits of Research

Published

April 07, 2021 at [frontiers](#)

- Despite COVID-19 pandemic have caused various restrictions and barriers to the field of research, various COVID-19 studies have been augmented. A multidisciplinary research group, Panama Aging Research Initiative (PARI), was studying the characteristics of aging in Panamanian population for the last 10 years which was halted during the pandemic because elderly were the most vulnerable population to COVID-19. Their focus shifted to pandemic-related studies but yet faced other challenges. This article aims to present the critical role of clinical researchers in such emergency situation, and how to balance between the individual, scientific and social benefits of research.
- Ethical Issues During Public Health Emergency Situations
- It's the researcher's ethical responsibility to contribute into research during emergency situations, such as vaccine, clinical trials, psychological and social research to create guidelines, identify risk factors, evaluate tests and generate appropriate interventions. Collecting data requires flexibility and agility, as in some situations it might take sometime, up to months, to collect data.
- Sociocultural and Socioeconomic Considerations for Research in Low- and Middle-Income Countries
- Research in low- and middle-income countries can be challenging due to the nature of crisis, limited healthcare systems and funding, inadequate communication and policies in response to epidemic. In Panama for instance, COVID-19 pandemic exposed many social, health, economic and educational inequalities and mostly affected the vulnerable population. Insufficient medical personnel and infrastructure hindered data collection processes in the hospital research area. In addition, it was challenging to enroll patients due to patient's availability, fears and psychological distress.

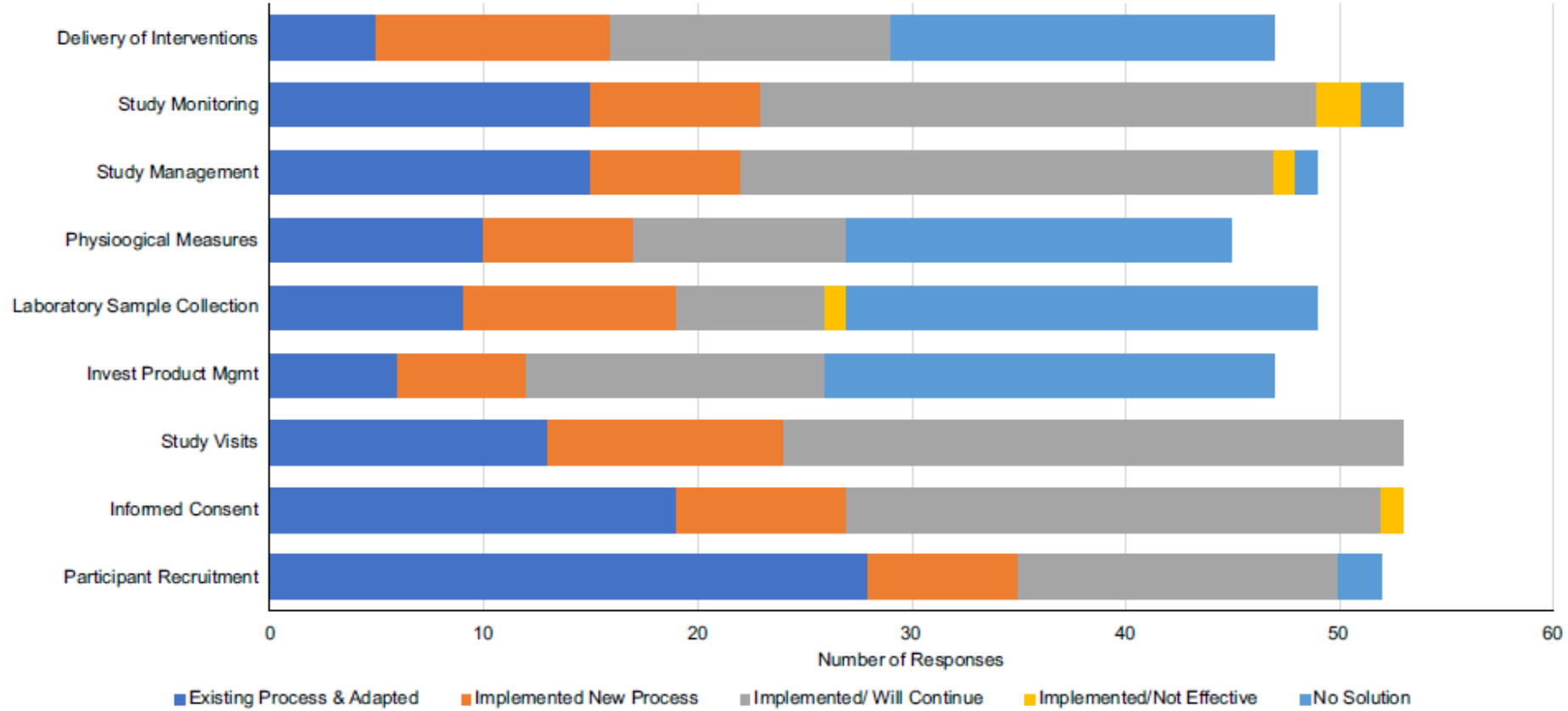
Psychological And Social Impact Of Covid-19

- Panama Aging Research Initiative initiated seroprevalence antibody study in three groups: healthcare professionals, healthy controls from blood donor clinic, and SARS-CoV-2 positive hospitalized patients from public hospitals. In the initial phase, data collection was diverse due to scarce knowledge on the virus, high mortality rare and no approved therapy. Additionally, some patients were delirious and psychologically distressed. Secondly, there was several barriers especially with cultural and low literacy levels. Thirdly, patients were more comfortable in rating the hospital services such as the rooms, bathrooms condition, food and understaffed hospital wards. Fourthly, the impact of COVID-19 on the mental health imposed the biggest challenge to the research and patients. Patients were lonely, uncertain, confused, angry, sad, anxious, and stressed; isolation and quarantine might have augmented the worsening of mental health. Lastly, the fear to experience death, whether it was their death, family, loved ones, or the patient in the same room in the hospital. Therefore, It is crucial to assess if imposing such questions would emotionally and psychologically harm the patient. In the contrary, patients often look for an external way to help them cope with the challenges and burden, whether it was spiritually and religion, gratitude or social support.
- In conclusion, it is crucial to public health emergencies to run such studies, taking into consideration the ethical principles and empathic engagement with participants. At an individual level, the researchers were emphasizing that such studies aims to benefit the participants and make sure that the participation is voluntarily. At the scientific level, expectations were set to urgently respond by rapidly generating data and provide multiple therapeutic strategies, prevention mechanisms and diagnostic tests to tackle this new disease. The previous experience of PARI study group in the elderly population has supported them in tackling the pandemic and have a better management overall.



Continued

Figure 1: Institutional experiences implementing a virtual process for conducting clinical research during the pandemic



Continued

Figure 2: Virtual clinical research playbook

Readiness & Needs	<p>Develop an understanding of the organizational culture to support and to utilize virtual approaches for clinical research</p> <p>Assessment and Reassessment</p> <ul style="list-style-type: none"> • Infrastructure • Policies & Procedures • Access to technology • Institutional expertise, experience, & demand
Collaboration & Coordination	<p>Establish a working group with broad representation across organizational stakeholders -</p> <ul style="list-style-type: none"> • investigators & coordinators • CTSA/Cancer Center/Health System • research regulatory, compliance and risk management offices • research and clinical support services (laboratory, pharmacy, nursing) • Information technology & Information security (electronic health record integration, virtual platforms) • communications <p>Collaborate to identify and remove barriers; develop solutions and best practices</p> <p>Consider Regulations, Participant Experience & Sponsor Expectations</p> <p>Review and refine approaches as best practices emerge</p>
Adoption	<p>Trial Design & Planning</p> <ul style="list-style-type: none"> • Consideration of virtual approaches in design • Participant perspective (access to technology; language considerations) • Identify activities that can be supported using remote/virtual methods • Contingency planning; workflows; systems; and technology needs
Dissemination of Resources	<p>Centralized resource compilation</p> <p>Institutional & industry best practices</p> <p>Consultations and Training</p>



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