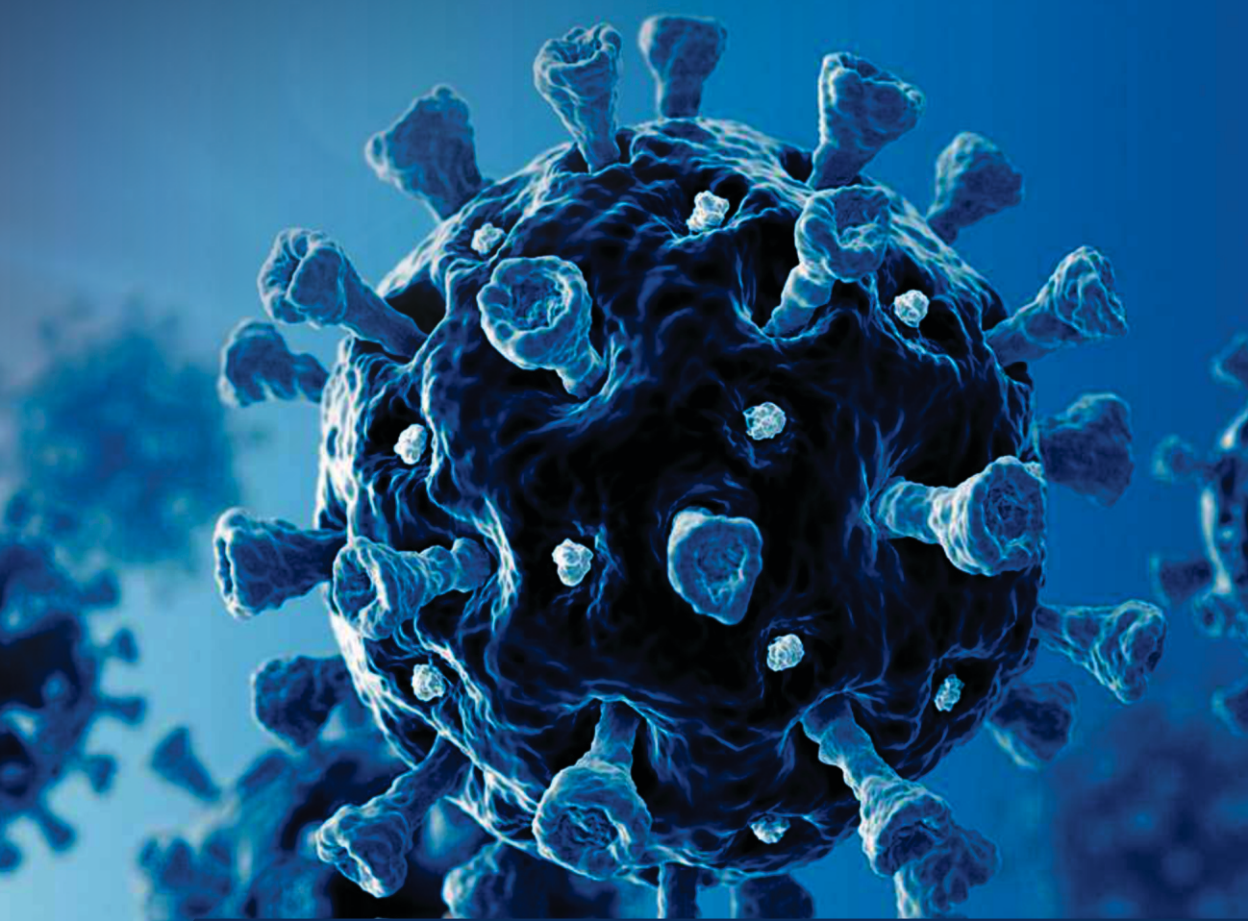
CASS
LAHORE

# Implications of a Pandemic on National Security Covid-19 as a Case Study

## Post-Event Report



CENTRE for AEROSPACE & SECURITY STUDIES, LAHORE

# IMPLICATIONS OF A PANDEMIC

## ON NATIONAL SECURITY

# COVID-19 AS A CASE STUDY

### POST SEMINAR REPORT

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**CENTRE for AEROSPACE & SECURITY STUDIES**

**March 2023**

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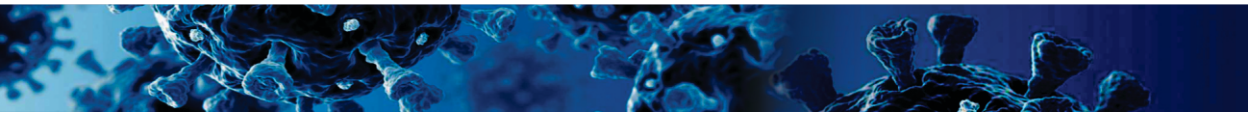
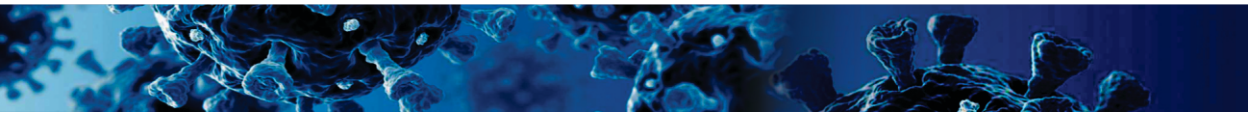


# INTRODUCTION

The COVID-19 pandemic has had a profound impact on human security. The most obvious is the cost to human health: 755 million confirmed cases, and 6.8 million confirmed deaths. COVID-19 took place in a highly globalised and interdependent world with complex supply chains, an incredibly high volume of travel, deeply interlinked economies, and escalating superpower competition. In an incredibly short amount of time, COVID-19 disrupted the national security calculus in unprecedented ways.

The repercussions of the pandemic have been severe and are still being felt: a projected cumulative loss of about US $13.8 trillion to the global economy through 2024, supply chain disruptions, job losses triggering recessions, and social unrest fuelling social upheaval. The pandemic caused political, economic, health, and social crises at the global level. It forced nations to re-evaluate concepts of national security and recalibrate to factor in large-scale, non-traditional threats of a biological nature. COVID-19 also brought focus to the empirical threat of the dual-use advancements in biotechnology, gene editing, and DNA modification techniques to create pathogens (viruses/bacteria) with enhanced killing characteristics that can be called next-generation bioweapons.

In Pakistan, there were around 1.5 million confirmed COVID-19 cases and 30,640 deaths. The socioeconomic impact of COVID-19 has been severe, causing a contraction in GDP and putting serious pressure on the country's threadbare health infrastructure. With the

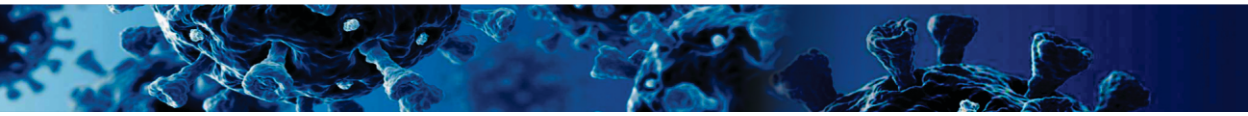


world's fifth-largest population, incredibly high urban population density, and a healthcare system already under great strain, Pakistan faced a monumental crisis with multi-layered implications, particularly on the healthcare and the economic front.

With this contextual backdrop, a seminar at CASS, Lahore, was conducted on 21 March 2023 on the topic of "The Impact of a Pandemic on National Security: Taking COVID-19 as a Case Study". The topic was selected to examine the multi-faceted impact of COVID-19 on national security, to analyse the constraints of past responses, and to brainstorm future strategies to manage long-term risks to national security. The other intent was to explore the possible development of "Next Generation Bioweapons" in light of advancements in biotechnology and genetic studies.

The Seminar was chaired by Air Marshal Asim Suleiman, President CASS Lahore, and was moderated by researcher Sabina Babar. The four seminar speakers included two eminent guest speakers and two in-house speakers from CASS, Lahore.

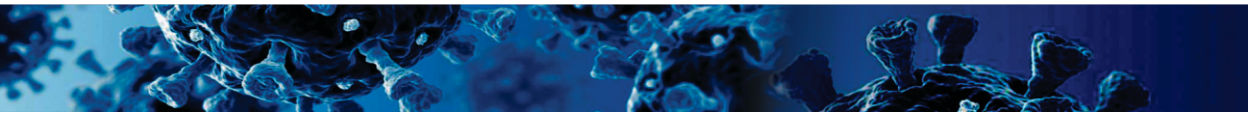
- Dr Faisal Sultan, CEO of Shaukat Khanum Memorial Cancer Hospital
- Prof Col Dr Muhammad Ashraf Chaudhry, HOD of Community Medicine at CMH Lahore Medical College
- AVM M Z Faisal (Retd), Director of Warfare and Aerospace
- Dr Ghulam Mohey-ud-din, Director of Economic Affairs.



The seminar was attended by senior serving and retired PAF officers, academicians from different universities, and representatives from local think tanks.

## SPEAKERS OF SEMINAR

| | |
|---|---|
| Impact of a Pandemic on National Security | AVM M Z Faisal (Retd) |
| Understanding the COVID-19 | Col Dr. M Ashraf Chaudhry |
| Pakistan's Response to Manage COVID-19 | Dr Faisal Sultan |
| The Impact of COVID-19 on the Global Economy | Dr. Ghulam Mohey-ud-din |
| Concluding Remarks | Air Marshal Asim Suleiman (Retd)<br>President, CASS Lahore |



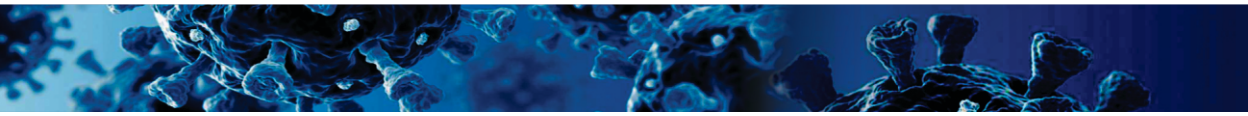
# EXECUTIVE SUMMARY

## IMPACT OF A PANDEMIC ON NATIONAL SECURITY
## COVID-19 AS A CASE STUDY

The first seminar of CASS Lahore was held on 21 March 2023 on the impact of the COVID-19 pandemic on national security. A summary of the speakers' dominant thoughts and leading views is produced below.

### COVID-19's Impact on National Security

The World Health Organisation declared COVID-19 an epidemic in March 2020 and to date, there have been at least 755 million confirmed cases of COVID-19 and 6.8 million confirmed deaths. Governments around the world grappled with a situation fraught with uncertainty and panic. With extreme pressure on resources, states faced incredible challenges of chaotic governance, failing economies, collapsing health infrastructures, diplomatic rows, and social chaos. The global diplomatic order also saw disruption with selfish nationalism, blame games, border closures, import/export embargoes, and travel restrictions. However, there were also encouraging examples of international cooperation on disease control, vaccine diplomacy, and financial support offered to struggling nations. The pandemic shifted focus from traditional security to human security and established a direct link between the security of the individual and the security of the state.

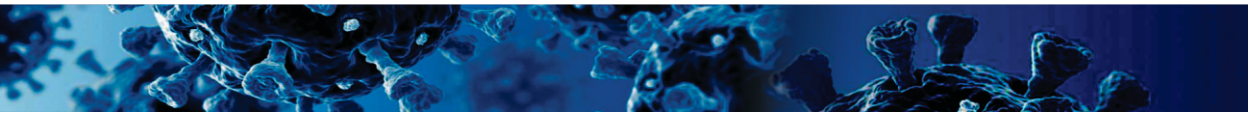


## Dwindling World Economy

The World Bank declared COVID-19 as “the largest global economic crisis in more than a century”. The World Economic Outlook has projected the cumulative output loss through 2024 to be about US $13.8 trillion with wide-ranging implications for human development. In 2020, there was a decline of 5.71 percent in world GDP growth, a drop of 5.3 percent in world merchandise trade, the largest since the Great Depression of the 1930s, a 69 percent loss in passenger revenues equivalent to approximately US $116 billion, and a loss of US $1.3 trillion in revenue from tourism. The year 2020 also witnessed a loss of 255 million jobs worldwide which further exacerbated the socioeconomic divide within societies and nations. The recovery from the crisis has been challenging, with developing countries dealing with a multitude of issues stemming from the pandemic’s aftermath.

## Pakistan’s Response to COVID-19

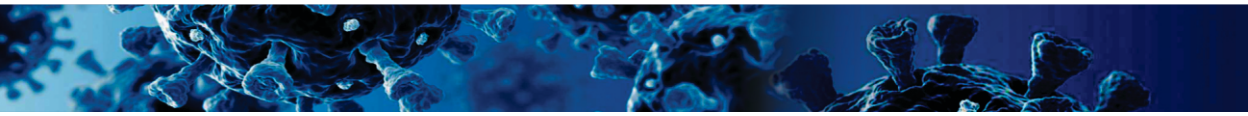
The socioeconomic impact of COVID-19 has been severe for Pakistan. There were 1.5 million confirmed cases, and 30,640 deaths. The economy also saw a negative GDP growth rate of 1.3 percent in 2020. The major challenges that Pakistan faced were primarily three; a devolved federal structure and delegated health responsibility, scarcity of capacity and resources, and the absence of effective data flow mechanisms. The focal step in the response was the establishment of the NCOC in March 2020 which then spearheaded the response campaign. It sought support from both



the civil and the armed forces on war footing to deal with this crisis. The response strategy included targeted lockdowns, border control, and stringent checks at all entry points into the country. Focused emphasis was laid on capacity enhancement for beds, oxygen, ventilators, disease testing, and vaccinations. The testing capacity went up from 472 to 100,000 tests per day. For information and data flow, the pre-established framework for polio was utilised for responding to COVID-19. The same dashboard was also used for tests and the healthcare capacity which had input from all provincial systems including hospitals, labs, helpline centres, etc. This data helped create heat maps for directing resources. Despite a fragmented health structure, Pakistan's response exceeded expectations and its success was acknowledged by Secretary-General UNO, WHO, leading publications such as The Lancet, The Economist, and Forbes.

**The Myth of the Next Generation Bioweapon**

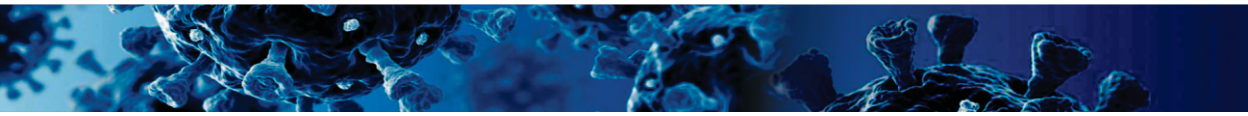
COVID-19 caused a resurgence of the tabooed discussion on bioweapons. This is because many of its features resembled that of Next Generation Bioweapons; more infectious, greater transmissibility, and resistance to drugs. Advancements in biotechnology, genetic engineering, and DNA modification have reached a stage where targeting ethnic groups, specific crops, and poultry will be possible. Similarly, a material-eating virus, when developed, will be able to damage infrastructure, weapons, and systems. Just as hybrid warfare has become a preferable alternate strategy to all-out wars,



bioweapons may also become the preferred weapon for hybrid warfare because the weapon is invisible, and the attack will usually pass for a natural event. The same concern was echoed in strategic assessments by other nations as well. Reportedly, some advanced states have the capacity to transit from vaccine production to bioweapon production in a matter of days. The weakness of the Biological Weapon Convention of 1972 to verify the compliance of states and its inability to investigate the spread of bio-diseases accentuates these apprehensions.

**Key Policy Recommendations**

The recommendations included the formulation of a national biodefence strategy, and the review of the National Disaster Management Authority Act to establish a clear mandate for its role and task, with proper accountability. Strengthening the resourcing and staffing of the Centre for Disease Control (CDC), the Health Data Centre, and the National Vaccine Centre is essentially required to effectively combat future health emergencies and possible pandemics. The placement of the Drug Regulatory Authority under a professional board of medical and pharmaceutical experts would greatly enhance its effectiveness and utility. For economic uplift, a road map for steady economic growth for the next 10-15 years is needed, endorsed by all political stakeholders and protected by the parliament under an act of law. Looking at the increasing frequency of infectious disease outbreaks, allocation of adequate resources to



the public healthcare systems is needed to bolster resilience against such catastrophes.

**Concluding Remarks**

In his concluding remarks, President CASS Lahore, Air Marshal Asim Suleiman thanked the esteemed panellists for engaging in illuminating discourse on this complex, multi-faceted subject. He identified the link between the pandemic and the operational readiness of the armed forces, with examples from history as well as the present day. He highlighted the dual role of the armed forces during such scenarios: ensuring their own operational readiness, and aiding the civil in managing the pandemics. He also gave a stark reminder that the pandemic is not over and is now in its endemic stage, after having reduced global life expectancy by two years. Speaking of Pakistan's response, he praised the role of the NCOC in managing COVID-19. The President finished by expressing the need for humanity to collaborate on responses to such events in the future as well.

## Spread of COVID-19

1. COVID-19 was declared a health emergency in January 2020 and an epidemic in March 2020, and is still a threat as an endemic. From Wuhan to 180 countries, it took less than a hundred days to spread.

2. COVID-19 has several characteristics of an ideal biological weapon, including a high transmission rate, long incubation period, airborne transmission, and significant death rate.

3. No convincing scientific evidence suggests that COVID-19 was created as a bioweapon. If it was, then it raises serious questions such as who invented it, who was the target, and what were the objectives.

## Pakistan's Response

1. The National Command Operations Centre (NCOC), which spearheaded the response campaign against COVID-19, has been replaced by the Centre for Communicable Diseases (CDC), established in the National Institute of Health.

2. Devolved federal structures create challenges for a central, coherent, and coordinated response in face of a pandemic.

3. The balance between life and livelihood demands targeted Non-pharmaceutical Interventions (NPIs) like smart lockdowns.

## A Blow to Humanity and Healthcare Systems

1. There were 757 million confirmed cases of COVID-19 and 6.85 million deaths globally.

2. The global life expectancy, post- COVID-19, has reduced by two years; from 73 to 71. It fell the most in Europe and America.

3. Approximately 5 percent of COVID-19 patients suffer from complications like multiple organ failure, which requires ventilation support.

4. The percentage of GDP allocated to the health sector in Pakistan was just one percent in 2019 (Rs. 372 billion approximately) to 2.2 percent of GDP in 2022 (Rs. 913 billion approximately) which is considerably less than the 5 percent requirement by WHO.

## Challenges to the Economy

1. The year 2020 saw a global debt surge of 28 percent, the highest in the last 50 years. An estimated 97 million people were relegated to living on less than US $1.90 a day.

2. The pandemic resulted in 8.8 percent decline in working hours globally which equals 255 million jobs. Most of the lost jobs were in the low-wage cadre, resulting in further widening of the socio-economic gap between rich and poor.

3. As per Global Peace Index 2021, out of 163 countries, 105 recorded an increase in military spending, highlighting the emphasis on traditional security and possible future conflicts even when human security was under stress.

4. The restrictions on the movement of goods and services resulted in a 5.3 percent decline in global merchandise trade which is the largest drop since the Great Depression.

5. In 2020, community mobility declined by more than 70 percent, and global passenger traffic declined by 66 percent resulting in a revenue loss of US 116 billion.

## Impact on National Security

1. Pandemics are low-probability, high-consequence events that can concurrently target both traditional and non-traditional security paradigms.

2. National security is mostly seen from the perspective of securing borders. COVID-19 has incorporated non-traditional security threats to its understanding such as pandemics, natural disasters, and climate change.

3. COVID-19 has highlighted the challenges of global interdependence and has emphasised the need for a state to be as self-reliant in its resources as possible to protect the vitals of its national security.

4. The key negative trend in 2020 was the global rise in civil unrest which rose globally by 10 percent and created a challenge for internal security.

## Threat of Next-Generation Bioweapons

1. “Next Generation Bioweapons” are traditional biological agents genetically modified for increased survivability, infectivity, rapid spread, and resistance to drugs.

2. The study of genes and molecular biology can one day develop viruses that can target specific ethnic groups, particular crops, food, and some specialist viruses can even destroy infrastructure and equipment.

3. The bioweapon threat has been raised by the Americans in the recently published "US National Biodefence Strategy" of October 2022, and warns, "Nation-states and terrorist groups have found value in pursuing biological weapons."

4. Reportedly, many advanced nations have the dual-use potential to move away from vaccine production to bioweapon production in a

## Bioweapons, Pandemics, and Future Wars

1. The frequency of epidemics / pandemics seems to have increased. For instance, AIDS in 1981, SARS in 2002-03, Swine Flu in 2009-10, MERS Middle East Respiratory Syndrome) in 2015, and COVID-19 in 2019.

2. A pandemic can have three significant impacts on the military; significant numbers ill, heavy engagement in civil aid duties, and dip in the defence budget.

3. The use of bioweapons in different wars is as old as 200 BC but there is no evidence to suggest that these had any significant impact on the outcome of wars. These are not classic battlefield weapons, but they can slow down the tempo of operations.

4. The next generation of bioweapons with designated targets may become a preferred tool of indirect wars to target the enemy's economy and its population.

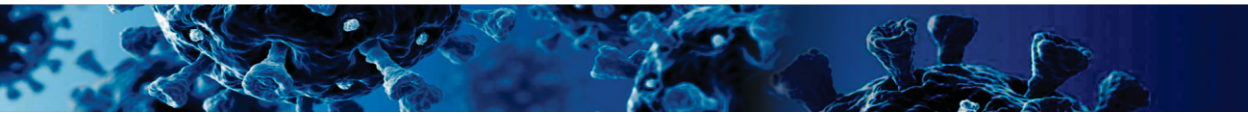
## DELIBERATIONS BY THE SPEAKERS

### Air Vice Marshal M Z Faisal (Retd),

The scope covered the following aspects.

- Is COVID-19 a bioweapon? Theories around the breakout of COVID-19
- Understanding of Bioweapons and historical perspective of their use
- UN Convention against the use of Bioweapons
- The national security implications of the outbreak of a pandemic

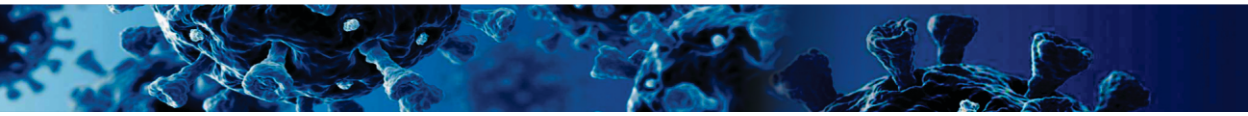
The discourse primarily focused on establishing the catastrophic impact of the COVID-19 pandemic on different domains of national security. The speaker cited examples of selfish nationalism in international diplomacy, political chaos, economic meltdowns, healthcare system collapses, and social unrest as a direct fallout of the pandemic. The other highlight of the discourse was his appreciation of the dual-use advancement in biotechnology and gene editing tools and the plausible link with the development of “Next Generation Bioweapons”. The speaker voiced concern about the possibility of the covert use of advanced biological agents to create a national security crisis, especially when the current UN Biological Weapon Convention is also seen as lacking effectiveness in meeting



its objectives. He concluded his talk with comprehensive proposals to strengthen national security against future pandemics.

***"While the Biological Weapon word had nearly become taboo because of worldwide rejection but sadly, this episode of COVID-19 has again drawn attention to the misuse of this non-traditional threat."***

AVM M Z Faisal began his talk by mentioning two prescient incidents of very uncannily COVID-19-like outbreaks depicted in popular media decades before the pandemic. In 1981, 38 years before the emergence of COVID-19, a crime-thriller novel, titled "The Eyes of The Darkness", describes a deadly Chinese bioweapon named Wuhan-400 developed in a lab outside the city of Wuhan. In 1993, 26 years before the emergence of COVID-19, an episode of hit animated show, "The Simpsons" mentions a pandemic caused by the respiratory virus around 2020. According to the speaker, there are multiple theories regarding the origin of COVID-19, but none have been conclusively proven yet. The majority of consensus believes there is no convincing evidence to suggest that COVID-19 was created as a Bioweapon even though there has been a blame game between US and China. According to the speaker, if COVID-19 had some human factor involved, some serious questions arise such as (1) Who invented it (2) Who was the target (3) What were the war objectives.



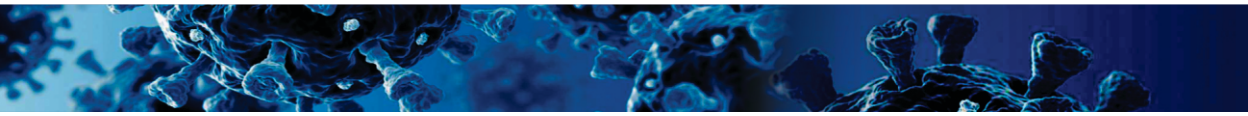
## Introduction to Bioweapons

The speaker remarked that the notion of bioweapons had achieved near universal taboo status, but certain characteristics of COVID-19, such as a high transmission rate, long incubation period, airborne transmission, significant death rate, and the obfuscation of its origin drew attention back to the possibility of the misuse of non-traditional threats such as bioweapons.

## Biotechnology and Next-Generation Bioweapons

***"COVID-19 has highlighted grave concerns about the dual-use potential of biotechnology and genetic engineering."***

According to the speaker, today the effects of traditional biological agents can be greatly enhanced by genetic modifications to create new pathogenic characteristics such as increased survivability, infectivity, rapid spread, resistance to drugs, etc. Such organisms with altered characteristics could be the "Next Generation Bioweapons". While gene-editing tools are primarily used to modify an organism's DNA with the purpose of curing diseases, it is easy to see how these may be weaponised. The speaker referred to the claim by scientists that the study of genes and molecular biology can one day even develop bioweapons that can target specific ethnic groups. Similarly, modifications may be made that lead to the food and agriculture industry becoming viable targets for biological attacks.



**Use of Bioweapons in History**

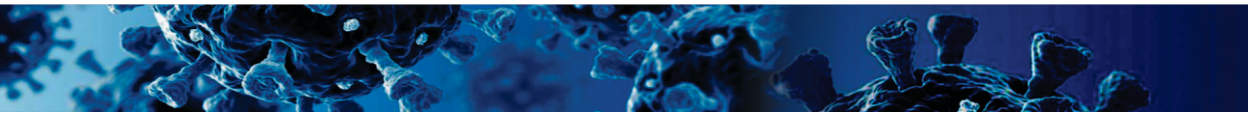
The speaker mentioned briefly about the usage of bioweapons dating back from 200 BC with Romans poisoning water wells with human bodies, the Spanish mixing leprosy-patient blood in enemy wine, and the English distributing blankets of smallpox patients to Americans, and so on. Biowarfare continued in WW-I, and WW-II, then in the Iran-Iraq, anthrax attacks in the U.S., and more recent accusations against Syria and Russia, etc.

**Treaties on Bioweapons**

The speaker then explained that the first formal treaty framework surrounding the use of poisons on the battlefield was signed in 1874, followed by the 1925 Geneva Protocol, which was largely seen as a no-first-use agreement only since it said nothing about production, storage, or transfer. Today, ratified by 183 countries, it is the 1972 Biological Weapons Convention (BWC) and the 1993 Chemical Weapons Convention (CWC) that prohibit the development, production, acquisition, transfer, stockpiling, and use of biological and chemical weapons. However, the speaker pointed out that it allows for stockpiling of biological agents for “preventive, protective, or other peaceful purposes”, and compliance is challenging to assess.

**Probability of Future Use of Bioweapons**

***“Nation-states and terrorist groups have found value in pursuing biological weapons,”***



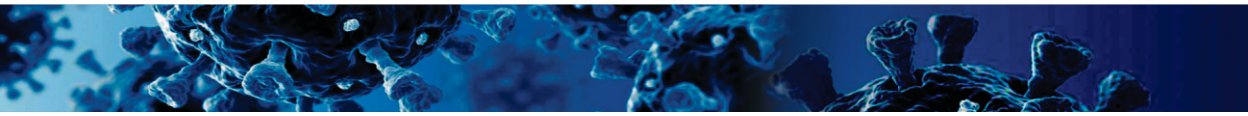
As per the speaker, historically, there is no evidence of the effective use of bioweapons in modern warfare. However, the most worrisome question today is whether advances in biotechnology could tempt states to start new biological weapons programmes afresh. It was pointed out by the speaker that multiple well-developed nations have the dual-use potential to move from vaccine production to weapons production in days. Whereas the probability of the use of bioweapons in the future is hard to predict, however, the speaker shared personal assertions in this regard. The speaker theorised that:

- Under strict conventions and global rejection, states may not indulge in the use of “conventional” bioweapons either overtly or covertly, in an inter-state war or hybrid war.

- States may covertly use genetically enhanced future bioweapons against another state in hybrid warfare if they can exercise control over its spread.

- Terrorist groups, with a low degree of probability, could use conventional biological weapons to spread terror. But such an attack is not likely to create any pull on the national security apparatus.

- A doomsday scenario, with a low probability, could be the possession of advanced bioweapons in the hands of terrorist organisations, stolen from research labs. Equally apocalyptic would be if any such bioagent accidentally gets released into the air, as many speculate happened in the case of COVID-19.



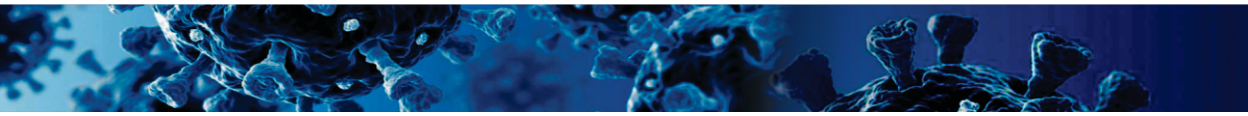
**Effects of a Pandemic on National Security**

The speaker called attention to the fact if there is social unrest due to the state's perceived failure in controlling the pandemic, then escalation can occur to the point of it being a national security issue. The speaker was of the view that COVID-19 has prompted the redefinition of national security paradigms the world over to factor in the impact of pandemics and related issues. The speaker briefly discussed the challenges that a COVID-19-like pandemic can cause in different domains.

**Geopolitics**

***COVID-19 created an engagement space between adversarial states, and was exploited to enhance political influence through "politics of generosity".***

From a geopolitical perspective, the speaker assessed that COVID-19 was initially a pessimistic tale of knee-jerk responses, selfish nationalism, blame games, border closures, import/export embargoes, and travel restrictions. COVID-19 created diplomatic rifts between states on the issue of oil prices and the export and diversion of medical supplies. But later positive developments showed international cooperation on disease control, "vaccine diplomacy", repatriation flights, financial support, etc. The Japanese Ambassador to the US, Mr Sugiyama made an interesting remark and said that traditional diplomatic dynamics and international



relations theories, which are centred on sovereign states, will not be sufficient in the post-COVID world.

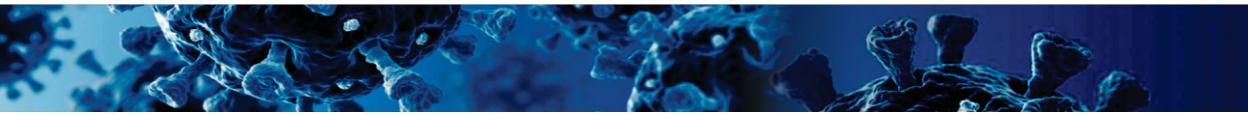
**Political Instability and Civil Unrest**

The speaker observed that fuelled by the multifaceted social challenges and angered by the government responses to the pandemic, the key negative trend in 2021 was the global rise in civil unrest and political instability. As per Global Peace Index Report for 2020, civil unrest rose globally by 10 percent. Countries such as India, Italy, France, Germany, and South Africa were particularly impacted by demonstrations.

**Economic**

***"We may be in the same storm, but we are in different boats," wrote British writer Damian Barr.***

The speaker held the view that the prime victim of any epidemic was the economy. The economic challenges witnessed during COVID-19 included a decline in GDP, enhanced poverty, job insecurity, food insecurity, increased external debts, etc. He shared that, as per the IMF, the year 2020 saw a global debt surge of 28 percent, the highest in the last 50 years, and countries like Argentina, Ecuador, and Zambia had indicated a desire to restructure their debts. COVID-19 disproportionately disrupted the lives of the underprivileged and led a widening of the income gap.



**Healthcare**

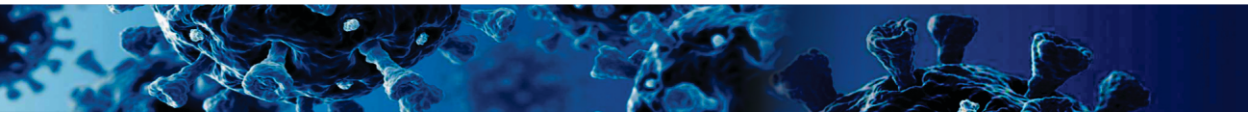
The organ of national security that is most affected by a pandemic is the healthcare system which collapsed in many countries. The major challenges included shortages of supplies and human resources. Even a developed country like the US struggled to cope with the situation.

**Armed Forces**

The speaker said he saw three kinds of impact on the armed forces with consequences on operational readiness, training, procurements, and maintenance. First, a significant number of security personnel or their families could get affected by a pandemic. Second, the heavy engagement of the armed forces in aid of civil power would limit resources elsewhere. Third, the economic fallout of the pandemic might adversely impact the defence budget. As per the speaker, a budget crunch may have bearing on the balance of power equation with the adversary, in the long term.

**COVID-19 and Pakistan**

The speaker concluded his talk by emphasising that due to long-standing flaws and a lack of strategic thinking and planning, countries like Pakistan faced an uphill task of dealing with such pandemic-like situations. He said that a robust, holistic approach was needed to address such situations, and that the impact of COVID-19 would be needed to be taken into account in the strategic equation for national security.



**Deductions**

- **Strengthen the Biological Weapon Convention.** Areas of transparency and verification may be enhanced and expanded. New clauses or reinforcement of existing regulatory regimes to avoid the misuse of biotechnology and gene-editing tools may be considered.

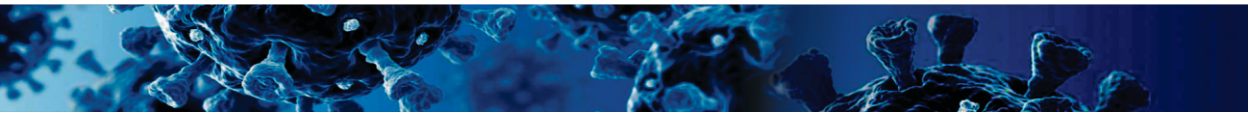
- **Formulation of a National Biodefence Strategy.** Pakistan should seek to prepare a national biodefence strategy which provides detailed guidelines across the entire spectrum of biological threats, including pandemics.

- **Institutional Reforms.** Reforms should be considered by the government to enhance efficiency of underperforming institutions. A pandemic can only be fought with a holistic approach.

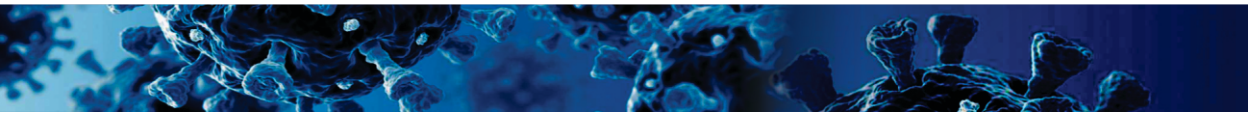
- **Economic Stability:** A long-term economic growth plan should be finalised by specialist economists, approved with political stakeholder consensus and protected by constitutional measures, should be put in effect under stringent oversight.

- **Capacity Building of the Public Health Sector:** Government to consider allotting four percent of the GDP to the public health system as against one percent in 2019 and 2.2 percent in 2022. Indigenous development of all epidemic-related healthcare medical equipment and medicines should be incentivised.

- **Emphasis on R&D in Biotechnology.** Government may consider providing resources and encourage higher education in



biotechnology and related fields. If biotechnology produces next-generation bioweapons, then the solution against such threats will also be found in biotechnology.



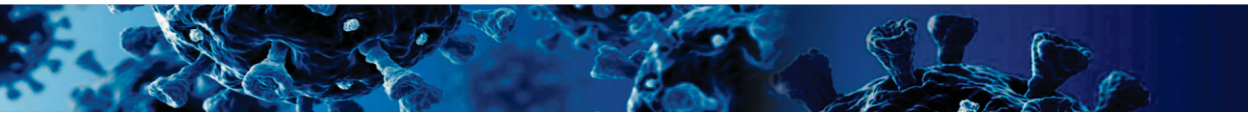
# UNDERSTANDING OF COVID-19

Professor Col Dr Muhammad Ashraf Chaudhry

The scope covered the following aspects.

- Different variants of COVID-19 worldwide.
- Symptoms, causes, and the WHO's role in treatments, medications
- Conspiracy theories around the development of vaccines and their efficacy in different countries
- Summary of the human catastrophe for different parts of the world and pertinent analysis

The speaker shared the generally-theorised origin of COVID-19 and highlighted how essential data was needed to conclusively decipher the origins of COVID-19. He informed the audience about the symptoms of COVID-19, explained the reasons behind its rampant spread, and elaborated upon the deeper impact of COVID-19 in lowering life expectancy around the globe. The speaker also shared understanding regarding the broader impact of the pandemic, such as burdening healthcare systems, the crucial role played by vaccines, unexpected challenges which arose due to conspiracy theories and vaccine scepticism, and how dealing with pandemics is a complex issue that requires a broad strategy.



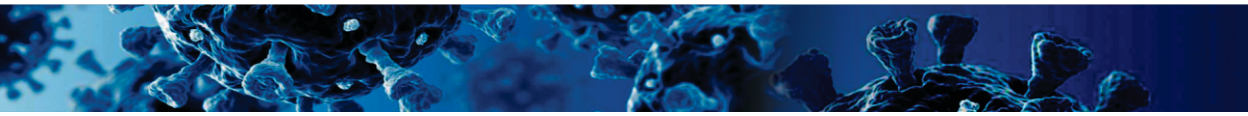
*"Everything we do before a pandemic will seem alarmist, and everything we do after will seem inadequate."*

**Origin and Cause of COVID-19**

Dr Ashraf began his talk with a brief exploration on the alleged origins of COVID-19, theorised to have spread from Wuhan, China, where four cases were reported from an animal market. There are several hypotheses about its origin and how it entered the human population, and the speaker utilised this uncertainty to highlight the critical importance of data, explaining that China has not uploaded all the data related to COVID-19. The emergence and rapid spread of COVID-19 prompted the WHO to declare the outbreak a public health emergency of international concern on January 30, 2020.

**Magnitude of Problem & Aftermath**

According to Dr Ashraf, what complicated the situation was the manner in which COVID-19 has rapid spread, an asymptomatic phase in infection, instances of severe disease and death, and non-availability of standard treatment. Global life expectancy declined to 71 from 73 in 2021, with 65 million people still struggling with long COVID-19. One out of ten people with long COVID-19 tend to stop working, and become a challenge for the healthcare system. These are the factors behind how COVID-19 was able to infect such large numbers of people, and the gradual understanding of its symptoms opened up new issues to be addressed within the system. According to Dr Ashraf, Long COVID-19, where symptoms persist for an



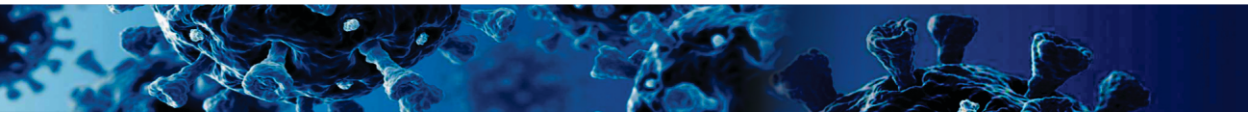
indefinite duration of time, is something that will challenge existing healthcare systems and pose serious questions for researchers.

**Symptoms of COVD-19**

The doctor highlighted the most common symptoms of COVID-19; fever, breathing difficulties, coughing, and loss of taste and smell. Over 80 percent of people who suffer from COVID-19 have either no symptoms or mild symptoms, and they completely recover without any treatment within two weeks. Only 15 percent of patients require hospitalisation as it becomes severe, and only five percent of patients suffer from COVID-19 complications like depression and multiple organ failure, which requires the patient to be put on a ventilator and lead to additional health complications. The aggregate impact of these long-term effects will be felt for years across the healthcare systems of the world, and the medical field is making great effort to process the data and get a better understanding of these issues.

**Mutations and Variants**

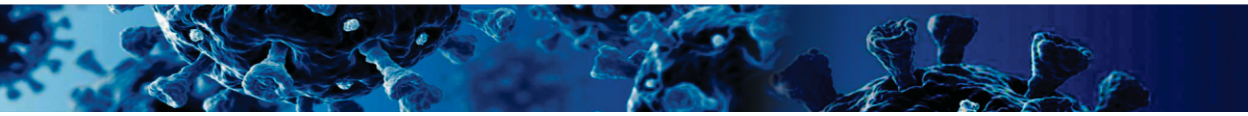
The doctor explained that as viruses spread through the populations, they constantly mutated and evolved, developing different characteristics and behaviours. He explained this is one of the core reasons why scientists urged stringent measures at all costs to contain the rampant spread of the virus, as the amount of exposure to new hosts would allow a wide range of mutations with differing outcomes, and in some documented cases, greater intensity of



infection and health impact. He also explained why it was important to study them to get a better understanding of the virus, and why they were named in generic terms to dissociate the stigma that may be attached to different countries where the variants were first discovered. It was of particular concern, Dr Ashraf said, that newer strains of the virus also developed ways to bypass the protection offered by vaccines and this led to millions of vaccinated people getting infected, some even multiple times. Unfortunately, as the speaker highlighted, this generated confusion in the general public that was already sceptical about vaccines, and fuelled conspiracy theories.

**Vaccine Conspiracies**

Dr Ashraf stated that the pandemic also led to a deluge of misinformation and disinformation, leading to near-unchecked proliferation of a range of conspiracy theories that created hesitancy in getting vaccinated. A sizeable proportion of the populations of various countries, including countries with high literacy rates, fell prey to such theories. Gallup Pakistan conducted its Coronavirus Attitude Tracker Survey 2021 and assessed that initially, the response was not positive as only 38 percent of people agreed during the second wave, but during the third wave, the number of people who agreed reached up to 65 percent. Dr Ashraf reemphasised that if people believe in conspiracy theories, they are more likely to believe in the misinformation online about vaccine safety. And as the mutated variants of the virus infected greater



numbers of people, the sceptics and conspiracy theorists saw their rationale being validated. The monumental achievement of developing vaccines in such short time and distributing them was blunted by the initial hesitation based on distrust of vaccines sowed by misinformation campaigns.

**Vaccine Efficacy**

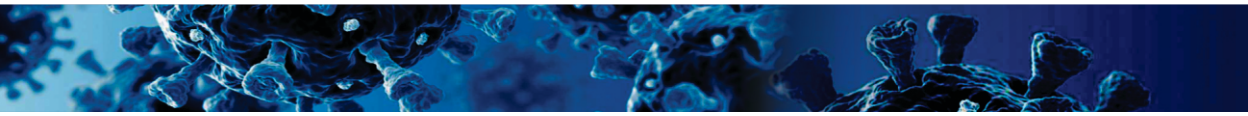
The speaker shared that phase three trials of various vaccines ranged from Oxford's Astra Zeneca on the lower end with 62 percent efficacy and Pfizer's BioNTech up to 95 percent.

**Conclusion**

The speaker emphasised that relying on vaccines alone would not get any country out of the crises incited by the pandemic. A comprehensive strategy of applying best practices such as masks, social distancing, and maintaining high hygiene standards was also needed. It was crucial to approach the response to the pandemic from the perspective of an entire community that would need to adhere to a thorough course of action collectively rather than individually to address the magnitude of the problem effectively.

- **Importance of Data and Understanding COVID-19's Origins**

Lack of certainty pertaining to the origin of COVID-19 highlights the importance and sanctity of data, which must be gathered, verified, and shared if such mysteries are to be conclusively resolved. Access

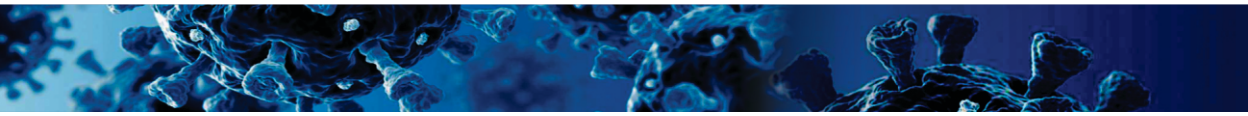


to critical data also facilitates the faster development of vaccines and cures.

- **Infection and Casualty Statistics**

To date, more than 755 million cases and nearly 7 million deaths due to COVID-19 have been reported worldwide. Whereas in Pakistan, more than 1.5 million cases and over thirty thousand deaths have been reported so far.

- **Symptoms:**
  - COVID-19 spreads through droplets and aerial transmission.
  - Symptoms of COVID-19 include fever, cough, breathing difficulties, loss of taste/smell, fatigue, and sore throat.
  - Diagnosis is confirmed by RT-PCR test. People are most likely to be infectious within the first five days of having symptoms.
  - Early isolation is critical to stopping the spread. Eighty percent of cases are mild and recover completely in two weeks.
  - Case fatality rate is less than one percent in young people under fifty, but is higher in those 60 years and above and in people with underlying conditions like heart disease, diabetes, hypertension and cancer etc. In these cases, it can lead to severe disease and death.



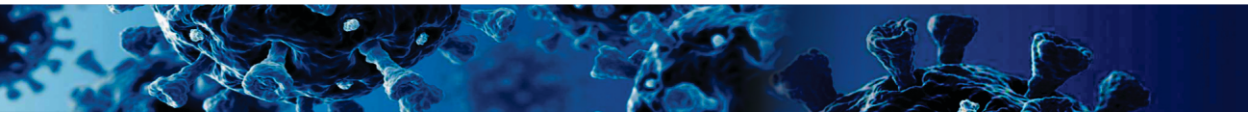
- **Treatment & Preventive Measures:**

Prevention of infection through vaccines has proven to be the most effective way of dealing with COVID-19. Precautions are necessary post-infection as re-infection may occur due to weakened immune systems, especially during resurgent waves.

- **Future Implications:**

  - To gauge the true extent of the impact of COVID-19, global life expectancy, especially in Europe, was reduced by two years on average.

  - Long COVID is also a potentially serious complication in which some of those infected, even mildly, continue to experience symptoms, including fatigue, respiratory and neurological symptoms for months to years. Such conditions can be debilitating for the individuals impacted.



# PAKISTAN'S RESPONSE TO COVID-19

**Dr Faisal Sultan**

The scope covered the following aspects.

- How COVID-19 reached and spread in Pakistan
- Policy framework to combat COVID-19
- Role of the National Command and Control Centre and the NDMA
- Pakistan's challenges for a similar outbreak in the future and policy recommendations

Dr Faisal Sultan spoke at length about the monumental challenge the COVID-19 pandemic posed for Pakistan, considering the on-the-ground realities and the extreme constraints under which the healthcare system operated. He highlighted the strategic thinking behind Pakistan's response, the superb team behind the effort, the invaluable contribution of the armed forces, the constant tweaking of the process, and the rapid development of the required infrastructure needed to inoculate the fifth-largest population against the world. He also expressed hope in how the lessons learnt from this may serve as critical experiences in dealing with other health issues plaguing the nation.

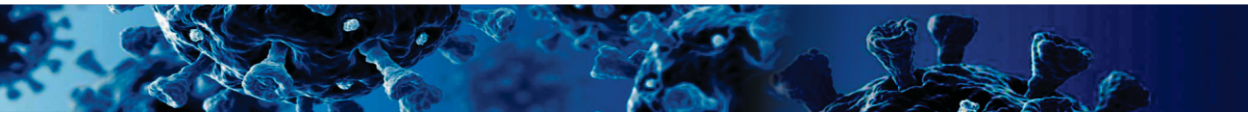
***"The current per capita health expenditure of Pakistan is very low, which is 43 dollars in total whereas the public sector has only 9 dollars."***

Dr Faisal Sultan began his talk by laying out the three things he felt were important to understand the situation from the perspective of Pakistan. The first was the policy framework and the role of the National Command and Operations Centre (NCOC), the challenges faced and solutions proposed and implemented, and ways to prepare for similar outbreaks in the future.

**Challenges**

The speaker emphasised that one of the biggest challenges that Pakistan faced was a devolved (distributed) federal structure, which is need-based and distributed with limited central oversight, minimal communication, and lacking centralised control and coordination mechanisms. He added that the US, India, and Brazil had similar health structures, and that was part of the reason why COVID-19 had such a devastating impact in these countries. The need for a cohesive, coordinated response was identified as key in dealing with the pandemic from the outset. The challenge was to manage this in an extremely short amount of time.

The next issue was the politicisation of the issue. In developed countries, public scepticism fuelled by conspiracy theories and misinformation created issues and social unrest. In a country like Pakistan, the main challenge was to balance life and livelihood.

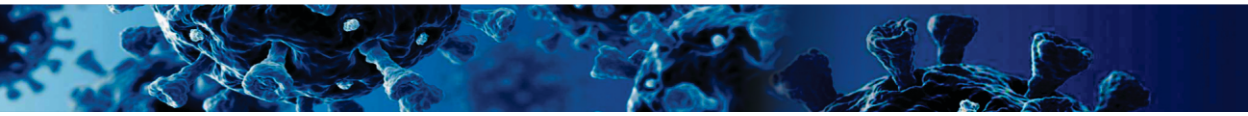


Lockdowns and reduced business activity would wreak havoc in a fragile economy such as Pakistan's. The capacity to respond was also an obvious challenge. Confronted with an unprecedented event such as a pandemic in modern times, no nation had enough capacity to deal with the situation. Pakistan already had a healthcare system that was extremely limited in its capacity to deal with routine issues.

Another major issue that was key to mounting a response was that of data flow. The speaker drew a parallel with the critical importance of a centralised flow of data by highlighting how data fed to the Central Air Command is essential in formulating strategies and responding to threats. The speaker mentioned that a similar structure was non-existent in Pakistan's devolved and dilapidated healthcare system. Thus, there was a dire need to set up a framework for gathering, processing, and streamlining the flow of data to a centralised hub to allow for fast and effective decision-making. This was a herculean task, akin to pouring Niagara Falls into a glass of water, as per the speaker. There were also peripheral issues which ranged from implementation effectiveness, vaccine distribution, and institutionalisation.

**Proposed Solutions**

The proposed and implemented framework to address the situation was early detection, immediate response, and a robust centralised organisational framework. Reliable expertise was needed, data flows and information systems were built and made operational, and targeted NPIs were needed for containing the situation in a

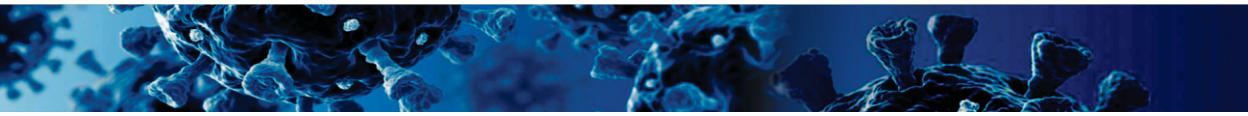


sustainable manner. Smart lockdowns, clear lines of communication, and capacity building were essential during this phase. A major hurdle was that per capita health expenditure is abysmally low in Pakistan, standing at a total of just US $43, of which the share of the public sector is only US $9. The rest was covered by the private health sector, whose resources could not be integrated into the response framework due to a number of complications.

***"March 24, 2020 saw a lockdown imposed which turned out to be a very blunt instrument for a specific problem."***

**Early Milestones**

Dr Faisal said that following the first formal consultation on COVID-19 on January 15, 2020, the national emergency centre was set up by the end of the same month. Screening at airports also began as well as the first border closure, that of the Pakistan-Iran border, occurred on February 25, 2020. Other measures included setting up screening at hospitals for COVID-19, quarantine facilities and broader border closures. March 24, 2020, saw a large-scale lockdown, which, according to the speaker, in hindsight seemed like a very blunt instrument for a very specific problem. Dr Faisal said that although the decision's effectiveness may be questioned now, at the time, there were a limited number of options to deal with the situation.



**National Command & Operations Centre (NCOC)**

The speaker laid out the timelines including how the setting up of the National Coordination Centre under the aegis of the National Security Committee on March 27, 2020, was carried out to mount an effective, coordinated, and unified response against COVID-19. Led by a three-star general and with valuable input from the PAF, it was able to collate and coordinate a calibrated response to COVID-19 and manage the vaccine procurement, storage, and distribution initiative as well. On top of the massive logistical coordination required, it also strove to maintain the crucial balance between saving lives and livelihoods.

The speaker stressed that a number of hurdles were overcome to deliver data-rich dynamic dashboards which were fed with a constant stream of data and allowed for quick responses to emerging threats. Tools such as heat maps and detailed demographic output were very useful in managing the situation and imposing lockdowns where required.

The NCOC had a range of responsibilities, including general coordination, operation of the testing data, and managing Non-Pharmaceutical Interventions. It also handled the system preparedness including oxygen production, border and airport controls, expert guidelines groups, the information support system, and vaccinations.

## Managing Data

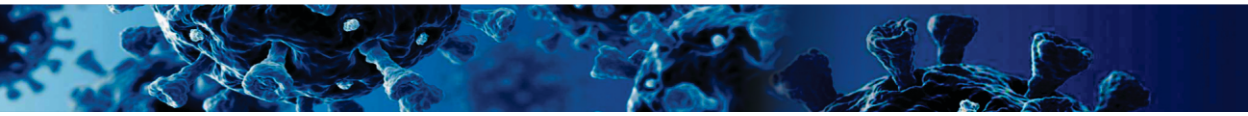
Key to the entire process was the effective management of data, for which effective governance was a prerequisite. Due to the extreme time constraints, the already existing polio dashboard was adapted for this purpose, and tweaked for usage by the NCOC according to its range of needs. Another similar dashboard was also included for lab tests and the healthcare capacity.

The manpower and equipment utilisation analytics, data modelling, contact tracing, hotspots, etc, required a dynamic and consistently updated data flow. There were separate provincial dashboards as well, which fed data to the national dashboard. The staff at NCOC was able to map hotspots by monitoring data trends and helped ensure the most effective allocation of resources as per need.

## Capacity Build-up

***"A truly impressive feat was the scaling-up of labs from just four to 173."***

The other essential aspect of the response was to bolster Pakistan's capacity to respond on the healthcare side of the equation. The testing capacity saw a leap from just 472 tests per day to over a hundred thousand tests per day. Ten new IT platforms were developed, and the stock of oxygen went up to 800 tonnes per day. The coordinated structure helped ensure the required supply of oxygen in every subsequent wave.



**Implementation**

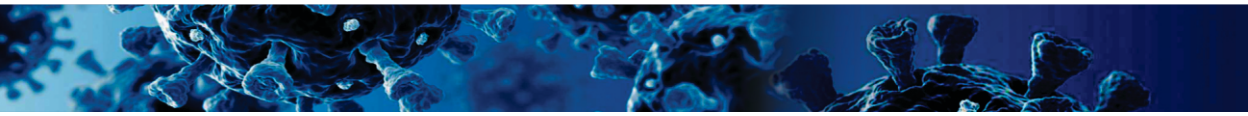
According to the speaker, in addition to balancing a number of factors in constant flux, an action plan also required tackling a health crisis, poverty and food supply issues at the same time. Not only was this massive task completed, but Pakistan emerged as amongst the most resilient countries in dealing with the menace of COVID-19. Data gathered from surveys of graveyards verified the data collected by the NCOC, further adding to the credibility of Pakistan's success in this matter.

**Effective Communication**

According to the speaker, effective communication was essential in ensuring the system operated and produced great results. Reaching that point required creating ways to aggregate, process, optimise, streamline, and update data to ensure its integrity and usability. Additionally, great efforts were made to ensure that accurate and helpful information was disseminated to the public in effective ways to combat misinformation, confusion, stigma, and polarisation. Guidelines were put in place to ensure coherence and credibility in the messaging, and communication also played a key role in helping build engagement and a well-informed health workforce.

**System Design**

The design and development of systems, strategies, and frameworks all culminated in the implementation phase. The speaker brought attention again to the issue that implementation was especially



challenging as it required the interoperability of multiple moving parts. The core issues were balancing disease prevention with societal impact, and juggling the threats posed by healthcare system collapse, poverty, and food security issues simultaneously.

**Vaccine Strategy and Cold Chain**

The speaker shared that Pakistan initially relied on donations and then on purchased vaccines till the COVAX procurement route became operational. However, the speaker mentioned that the sudden onslaught of the Delta variant of COVID-19 brought India to its knees, and India diverted the supply of vaccines pledged to COVAX for emergency domestic use, which led to the realisation that adversity from the pandemic saw a rise in nationalism.

Another achievement of Pakistan was ensuring the entire supply chain of six to seven different types of vaccines, from cold storage to injection to the public in a relatively short amount of time. At its peak, the well-designed system was able to supply up to 3.3. million doses per day.

**Conclusion**

The speaker explained that the COVID-19 response culminated in the reformation of the National Institute of Health (NIH) Islamabad so that it could effectively deal with complex health emergencies in the future and a Centre for Communicable Diseases (CDC) was also established within the NIH and included the reconstituted elements of the discontinued NCOC. The COVID-19 ordeal led to the

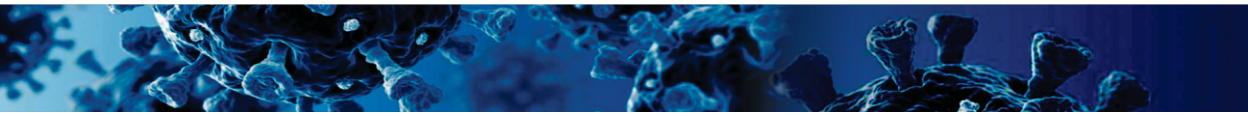
development, refinement, and optimisation of robust, adaptive, streamlined, and effective systems capable of reacting to health emergencies and crises. It should be ensured that the CDC can perform at the high level of professionalism and efficiency of the NCOC. The response also laid the groundwork for improving allocation and utilisation of resources in the healthcare system, and tackling other outbreaks in the future.

**Deductions**

- To promote effective governance and streamline the response to the ongoing health crisis, it is recommended to institutionalise the mechanisms of the National Command and Operation Centre (NCOC) in Pakistan. As per the NIH Act, the Federal Government, via the MoNHSRC, should facilitate the professional and transparent build-up of these centres, enabling them to undertake the operational responsibilities previously fulfilled by the NCOC. This will ensure continuity in the management of the pandemic and bolster the country's overall preparedness for any future health emergencies.

- To enhance our capacity to respond to future pandemics, it is essential to upgrade the data flow systems in Pakistan. This involves:

    - Establishing a streamlined mechanism to receive data, particularly in the areas of disease detection. To achieve this goal, it is recommended to integrate PCR test results into the polio dashboard.



- Develop a comprehensive system to monitor the capacity and manpower of health facilities in real-time. By improving data collection and analysis processes, the evolving nature of health crises can be better understood and responded to promptly with evidence-based interventions.

- It is imperative to review the National Disaster Management Authority (NDMA) Act to enhance its efficacy in performing the strategic role equivalent to that of the National Coordination Committee (NCC). This review should focus on strengthening the legal framework of the NDMA, clarifying its mandate and scope, and establishing clear lines of authority and accountability. A robust NDMA Act will serve as a critical pillar of Pakistan's disaster management infrastructure and will enhance our collective resilience in the face of natural and man-made disasters.

- To enhance preparedness for health emergencies, it is recommended to conduct a yearly mock drill to test and improve systems, including drug and vaccine capabilities.

- To undertake significant reforms to the Drug Regulatory Authority of Pakistan (DRAP), the government needs to establish a modern authority in line with global best practices, such as the FDA.

  - Reforms must address critical areas including governance, pricing of drugs, and stockpiling of relevant medications. To achieve these objectives, it is recommended to establish a professional board of medical, pharmaceutical,

and diagnostic experts to oversee the operations of the DRAP.

- Additionally, a modern mechanism must be developed to fix prices for essential drugs, ensuring transparency, professionalism, and adherence to global pricing standards. This will address the issue of running out of common drugs, which can hamper our ability to fight pandemics.

- A robust mechanism should be established to maintain a stockpile of relevant drugs to mitigate the impact of future health crises.

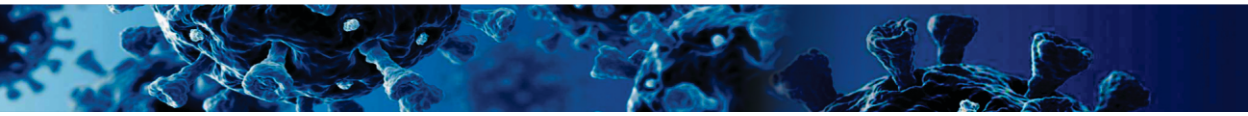
- To reduce reliance on external sources for vaccines, it is recommended that Pakistan undertake significant measures to enhance its domestic vaccine production capacity. This includes increasing the fill and finish capability to enable Pakistan to complete the final stages of vaccine production locally.

    - It is recommended that Pakistan move forward with an approved vaccine policy that incentivises private pharmaceutical companies to manufacture vaccines domestically. This policy should prioritise the production of normal vaccines for children, enabling Pakistan to establish a regional supply chain and eventually transition to the production of other vaccines. This will address the challenges of COVID-19 vaccine reliance on a limited number of

countries and ensure Pakistan's ability to meet its own needs and serve as a regional supplier.

- It is essential to promote innovation and research in the field of vaccines by bringing academia and industry together. While challenging, this collaboration will help spark the innovation cycle and drive long-term progress in vaccine development and production in Pakistan.

By implementing these measures, Pakistan can reduce its reliance on external sources of vaccines and ensure timely access to critical vaccines during health crises, thereby enhancing the health and well-being of its population.



# IMPACTS OF COVID-19 ON THE GLOBAL

**Dr Ghulam Mohey-ud-din**

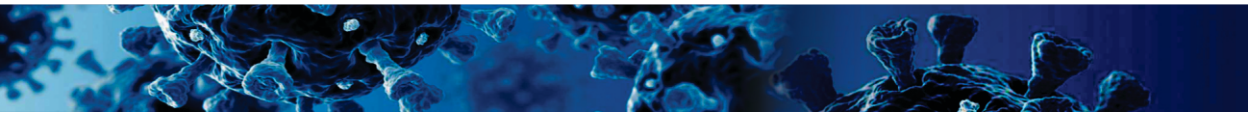
The scope covered the following aspects.

- Overview of COVID-19 and the global economy
- The evidence-based economic impact of COVID-19
- Role of social protection and fiscal stimulus
- Conclusion and policy recommendations

Dr Ghulam Mohey-ud-din's presentation began by analysing the direct and immediate impact of the pandemic on specific sectors such as travel, tourism, and the services sector. Using the example of negative demand shocks triggered by restrictions, the speaker highlighted the structural distortions caused by the pandemic across the world. Through this, he elaborated how the economic contagion spurred on by the pandemic engulfed peripheral economic sectors. The speaker drew attention to how the confluence of these factors created the perfect storm and triggered a global recession. He concluded his talk by proposing measures that sought to limit damage to the economy due to pandemic-like situations.

***"Pandemic triggered the largest economic crisis of the century."***

Dr Mohey-ud-din began by explaining that from the initial outset, travel restrictions and lockdowns caused immediate negative demand shocks in global economic activity. These negative effects



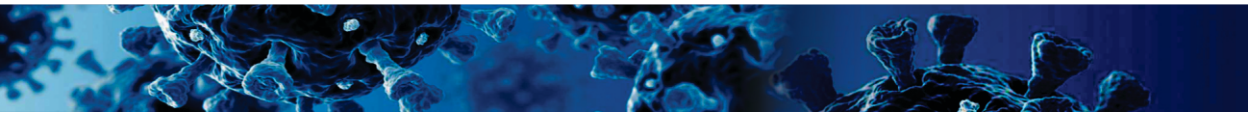
quickly spilt over to other countries not only due to the contagious nature of COVID-19 but also due to the supply chain disruptions economically. About 65 percent of world supply and demand is accounted for by G-7 countries; all of which were affected by the outbreak of COVID-19. The effects spiralled out of control to the extent that the total impact of the global supply shocks triggered the "largest economic crisis of the century".

**Global Economic Impact**

***"The International Air Transport Association (IATA) assessed a nearly 70 percent drop in air traffic."***

Encapsulating the immediate effect, the speaker highlighted how global mobility and travel plummeted, including both international travel as well as domestic travel. The International Air Transport Association (IATA) saw drops of 50 to 90 percent in public transport ridership around the world, which also greatly impacted oil prices and economic activity in general.

The impact on global trade as a result of restrictions on movement of goods and reduced economic activity severely disrupted the supply chains of a globalised, highly interconnected world. The speaker shared that the WTO registered a 5.3 percent decline in the volume of world merchandise trade, the largest drop in global trade since the Great Depression of the 1930s. Due to the complex nature of interdependencies of global trade, economic and financial systems, the aforementioned impacts culminated in a long-term



macroeconomic recession. The series of events set in motion by the pandemic will have far-reaching ramifications for the world.

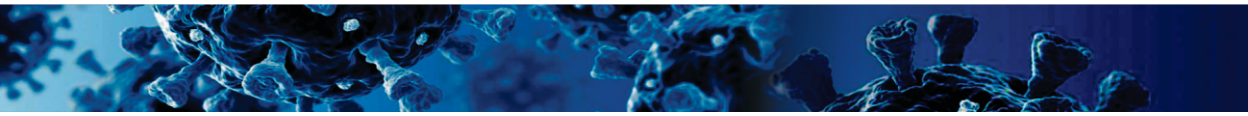
**Demand and Supply Shocks**

An initial external supply shock occurred due to countries entering lockdown. Reduced activity, mobility-wise and economic, led to job losses which in turn created a demand-driven recession. This ended up creating uncertainty which deterred investors and investments. One type of shock cascaded over to another, leading to a strong negative impact on economic outlook. According to the speaker's analysis, these three types of shocks interacted in a loop to impact different sectors of the economy.

The degree of impact differed across different industries. The international tourism industry and related services and businesses had their activity and income decimated, and other sectors which depended upon high-contact activity such as brick-and-mortar retail also saw sharp declines. Although low-contact services managed to shift to online service delivery models, they also faced decreased demand.

**Unemployment**

***"The International Labour Organisation (ILO) estimates that reduction in working hours also led to a loss of 255 million jobs worldwide in 2020."***



The COVID-19 pandemic had a direct and devastating impact on global employment, which rose to seven percent. The International Labour Organisation (ILO) estimates that reduction in working hours also led to a loss of 255 million jobs worldwide in 2020.

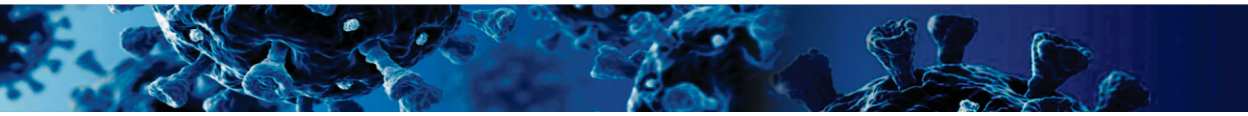
Stock markets around the world also plummeted, with the S&P 500 and the FTSE 100 experiencing drops of 30 percent and 10 percent respectively. Global GDP is estimated to have dropped by 5.71 percent, and approximations put fiscal stimuli globally at over US $12 trillion. Many countries have yet to regain pre-pandemic levels of economic activity.

**Financial Markets**

The speaker explained that the financial markets reeled under the impact of the pandemic. Stock markets the world over registered their steepest declines since the 2008 financial crisis. This was particularly painful for smaller investors, who lost a great deal of money during these crashes.

**Impact On the Tourism Industry**

The speaker elaborated that the impact of COVID-19 on the tourism industry worldwide has been severe and widespread. The pandemic led to travel restrictions, border closures, and lockdowns that significantly reduced international and domestic travel, resulting in a sharp decline in tourism and related activity. According to the United Nations World Tourism Organization (UNWTO), international tourist



arrivals fell by 74 percent globally in 2020, resulting in a loss of US $1.3 trillion in export revenue from tourism.

**Impact on Global GDP**

An assessment of data shared by the speaker highlighted that an unprecedented decrease in the size of the global economy occurred. The global GDP growth rate for 2020 remained negative 3.12 percent, showing a decline of 5.71 percent in GDP growth. Major global economies struggled against these economic adjustments, and governments reacted by offering fiscal stimulus plans. According to the IMF, as of September 2021, governments around the world had announced fiscal measures to the tune of approximately US $12 trillion to bolster their economies. This included direct spending, tax relief, and loan guarantees.

**Impact on Pakistan**

Pakistan's economy also saw GDP decline from 2.5 percent in 2019 to negative 1.3 percent in 2020 (a drop of 3.8 percent). There was a painful impact on the Pakistani workforce, especially with large numbers associated with labour-intensive activity and economically vulnerable backgrounds. According to a survey conducted by the Pakistan Bureau of Statistics (PBS), almost 27.31 million workers suffered due to the lockdown; 20.6 million either lost jobs or couldn't work and 6.7 million faced a reduction of income. There was also an across-the-board rise in food insecurity, although 60 percent of households remained food secure during COVID-19.

Financial assistance and relief were provided to 33 percent of households (approximately 17 million households) which also helped alleviate some of the economic distress, but an additional ten million people fell below the poverty line due to COVID-19, according to the Economic Survey of Pakistan.

A few key policy lessons that Pakistan can take away from the global economic impact:

**Deductions**

- **Strengthen Health Infrastructure & Preparedness**: Pakistan must focus on building and strengthening its healthcare systems to better respond to future health crises.

- **Increase Investment in Public Health & Disease Surveillance**: Investing in public health measures such as outbreak monitoring, early warning systems, and vaccine research and development is crucial in mitigating the impact of pandemics.

- **Economic Policy Responses**: Fiscal policy must have enough space for an economic stimulus package. Monetary policy should ensure adequate liquidity in the financial system for maintaining financial stability during pandemics.

- **Enhance Social Protection Systems**: Pakistan should prioritise building robust social protection systems such as cash transfers, food subsidies, and unemployment benefits.

- **Diversify Economies**: Developing countries like Pakistan that rely heavily on a single sector or export market should focus on diversifying economies so that future crises can be mitigated by spreading risk across multiple sectors and markets.

- **Increase Access to Digital Technologies**: The pandemic has accelerated the shift towards digital technologies. Pakistan should prioritise investments in digital technologies, particularly in education, health services, financial services, etc.

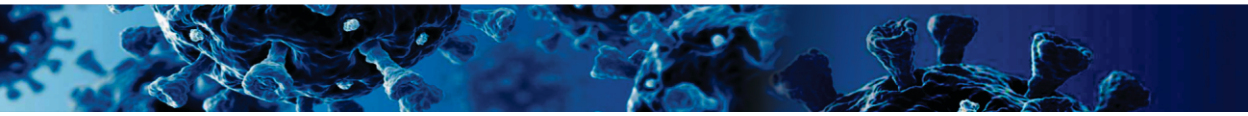
- **Strengthen international cooperation**: Pakistan should work together with other countries and international organisations to share information, expertise, and resources in responding to future pandemics.

By implementing these policy lessons, Pakistan can promote a more resilient and sustainable economy that can withstand future shocks and support inclusive growth and development.

# CONCLUDING REMARKS

**Air Marshal Asim Suleiman (Retd)**
**President, CASS Lahore**

Air Marshal Asim Suleiman thanked the panellists for their valuable contributions to the dialogue. His concluding remarks laid out the historic connection between disease outbreaks and the armed forces. The speaker highlighted how substantial losses on the battlefield in the past to disease outbreaks led to the military planners considering disease outbreaks as serious threats to be dealt with till the first world war. Eventually, due to advances in medicine and development of vaccines, the threat of pandemics had become a distant memory for the world. However, COVID-19 brought that threat to the forefront once more, especially in terms of its impact on national security. The speaker remarked how the armed forces had a dual role to play in the case of pandemics and similar catastrophes. The first was to ensure combat readiness under all pandemic conditions, and second, aiding the civil in disaster management. The speaker also drew attention to the considerable threat posed by advanced bioweapons in the modern age. He lauded the role of the NCOC in handling the response to COVID-19, but also advised caution as the pandemic still posed a threat in its endemic stage. In conclusion, he emphasised the need for humanity to confront such situations with a united front, and focus on assistance and cooperation.



## War and Plague

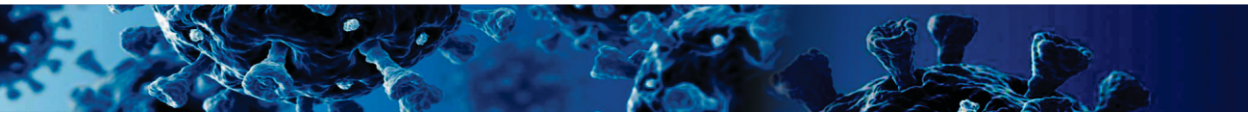
***"Where armies march, plague follows"***

President CASS shared historical facts regarding the impact of disease on conflict and warfare. Throughout history, armies and navies travelled great distances to fight and the scope of warfare saw a gradual expansion, culminating in the world wars. During that era, the death toll from diseases was exceptionally high. Great armies suffered humiliating defeats not to enemy forces, but to infectious diseases ripping through their ranks. The ratio of deaths by disease to death by combat was astronomically high in some cases, such as 12-to-1, in the case of the Sino-Japanese War. George Washington became one of the first military commanders to utilise the technique of variolation (immunisation by mild infection) on his army to prevent catastrophic losses to the rampant infectious diseases of their time such as smallpox.

***"Till the 19$^{th}$-century, military planners used to assume that 4 out of 5 losses of life would be due to diseases and just one out of five to combat."***

## The Era of Industrial Warfare

AM Asim Suleiman highlighted that the First World War saw two things occur simultaneously; industrial developments greatly enhanced the weaponry of the era, and improvements in medical sciences and procedures curtailed deaths by disease drastically. This led to significantly higher death tolls due to combat rather than



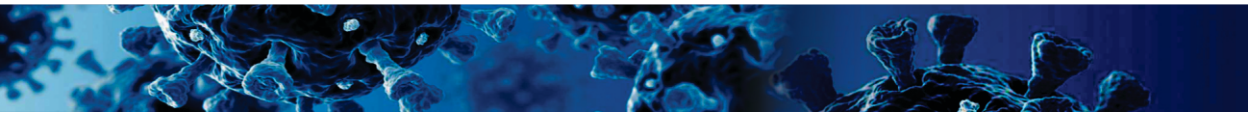
disease. The following years saw this trend grow and modern warfare occur without fear of potentially fatal, highly infectious disease outbreaks. The President CASS added that COVID-19 and the occurrence of its variants at regular intervals serve as a reminder to the Armed Forces to revise policies and formulate appropriate strategies to handle pandemics, be it peace or war.

**Operational Resilience**

The speaker highlighted that COVID-19 and its accompanying plethora of problems served as a reckoning for a number of institutions, systems, and governments around the world. He mentioned how China's sending of its carrier *Liaoning* on patrol through the strait of Taiwan during the peak of COVID-19 highlighted a high level of preparedness. Mentioning modern-day internal conflicts such as those in Syria, Libya, and Yemen, he added that the lack of data made it difficult to determine the exact impact of the outbreak on operations, but there was a surge in operations during the outbreak. He highlighted that the Armed Forces of Pakistan also went to great lengths to ensure that not only was operational readiness not compromised, but losses due to the pandemic were also kept to a bare minimum.

**The Role of the Armed Forces in Civil Efforts**

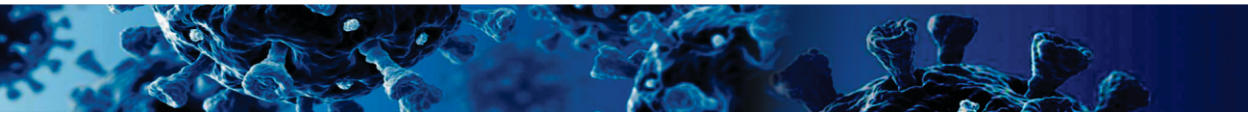
President CASS brought attention to the historic trend of the armed forces playing an important role in managing and carrying out responses to outbreaks, large scale disasters and crises. He



mentioned the pivotal role of the US military in taming the devastating yellow fever outbreak during the construction of the Panama Canal. Furthermore, the Marine Hospital in New York was the leading research institute in allergy and infectious diseases in the US. Keeping in mind the dire situation created by the pandemic, the joint civil-military effort ensured that Pakistan's performance was outstanding in these trying times. In the case of Pakistan as well, a well-coordinated and speedy response orchestrated by the forces can greatly facilitate the state apparatus in effectively dealing with calamities and crises.

**Caution and Vigilance**

The speaker then drew attention to how the pandemic exposed humanity to new threats and vulnerabilities. He highlighted how the blame game between China and the US underscored the substantial threat posed by biological weapons. And despite the US, China, and Russia being signatories to the 1972 Biological Weapons Convention, a loophole in the agreement allows any signatory to pursue bioweapon development under the guise of defensive purposes. Using the rapid spread of COVID-19 around the world in just 100 days, the speaker brought attention to the need for continuous monitoring of developments. No pandemic should be taken lightly, regardless of the apparent symptoms. Despite presenting relatively mild symptoms in the majority of cases, COVID-19 was still able to knock down global life expectancy by two years, even across the most developed regions of the world. It must be kept



in mind this decrease occurred despite the monumental leaps and advances made in the medical sciences, nutrition, and general lifestyle improvements.

**Impact on Social Fabric**

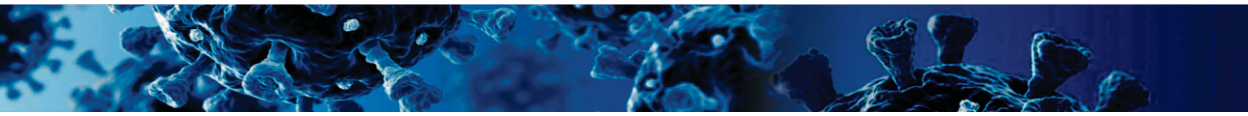
The speaker also spoke about how misinformation and disinformation were rampant and exploited to sow discord within societies and between nations. Autocratic elements saw an opportunity to further their interests, and developing nations and their at-risk populations bore the brunt of the pandemic's onslaught due to the unexpected economic downturn and lockdowns.

**Pakistan's Response**

In his overview of Pakistan's performance during COVID-19, the speaker highlighted that both the civil and armed forces playing to their strengths in a joint effort through the NCOC led to Pakistan faring the pandemic better than most. The Pakistani response was hailed as exemplary and lauded by the UN Secretary-General, the WHO, and leading global health publications such as *The Lancet*.

**Looking Ahead**

The speaker added that the pandemic has led humanity to the understanding that with strategic planning, concentrated effort, and upgraded capacity, adequate mechanisms can be put in place to deal with similar future events. He also added that developed and wealthy nations should also play a responsible role in assisting



developing nations with dealing with such catastrophes, and there were some commendable examples of generosity and humanity displayed during the pandemic.

In conclusion, President CASS shared some pertinent takeaways.

**Deductions**

- Pandemics leave a lasting impact on the collective state of human health. According to the latest studies, COVID-19 has reduced the average life expectancy of by a couple of years.

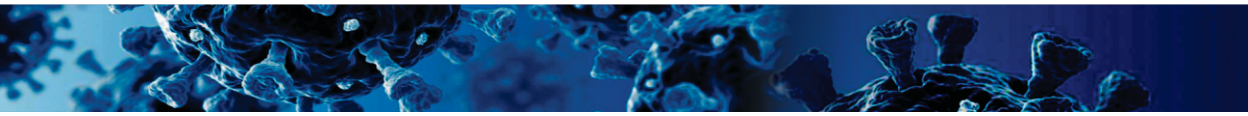
- Pandemics are phenomena which will need to be accounted for in any comprehensive long-term strategic planning, as their occurrence in the future has been considered likely by scientists.

- This pandemic has already caused a once-in-a-century global crisis, and although some signs of recovery are emerging, uncertainty persists.

- Any successful campaign against similar crises requires civil-military cooperation to be successful.

- It is imperative for the armed forces to ensure uncompromised operational readiness under pandemic-like conditions.

- Due to medical advances, diseases may not be as devastating directly on the battlefield, but collateral damage and operational impact would need to be taken into account.



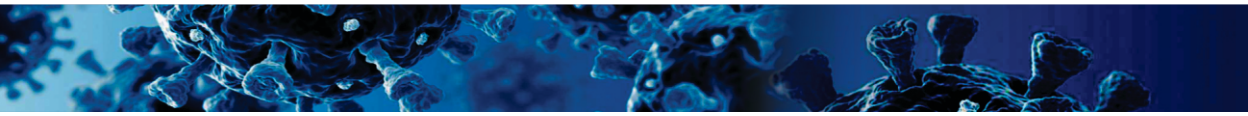
- Future pandemic threats might originate from natural or manmade causes, including those due to secret bioweapons development by some stakeholders.

- Healthcare system capacity and social welfare systems need to be strengthened and made resilient to weather such crises.

## INTERACTIVE SESSION

**A guest posed a question to AVM M Z Faisal pertaining to the possible response by Pakistan to an attack by bioweapons under the ambit of international law and the Law of Armed Conflict.**

The AVM responded by sharing his apprehensions about the use of biological weapons. He said that today's dual-use biotechnology and gene editing techniques can easily divert constructive research into the development of future bioweapons, and this cannot be inspected or verified by the 1972 Biological Weapon Convention. The efficacy of next-generation bioweapons may also be many times greater than those of previous times. Moreover, future bioweapons could target specific ethnic groups, particular crops, and animals. Work is also going on to produce viruses that can eat substances such as plastic, metals, etc. This is primarily a constructive endeavour to clean the environment but in its dual use, it can be used against military equipment such as tanks and aircraft. Even if these are not fully destroyed, they may be rendered operationally ineffective. These are the developments that may tempt states to covertly weaponise such technologies and capabilities. The fear is that just as hybrid warfare has become a preferred mode over conventional all-out wars due to multiple factors, similarly, the next generation of bioweapons with certain configurations may also become a preferred tool for waging indirect wars to particularly target the enemy's economy. Future

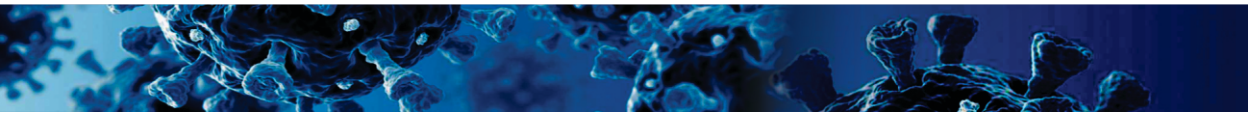


bioweapons could be invisible, untraceable, discreet, lethal, and customised against a certain set of targets.

The covert use of such weapons against Pakistan as part of hybrid warfare is a possibility that cannot be ruled out. The challenge in such a case would be difficulty identifying the origin. Even if it is established that it was a biogenetically developed weapon, it would be extremely difficult to establish its ownership and retaliate accordingly. Morally and diplomatically, it would not be appropriate for Pakistan to respond in a similar fashion, but it will have to look at other options including international laws and biological conventions. With regard to international laws, in the case of COVID-19, it had two aspects which could be referred to international courts. First, the allegation of COVID-19 being developed as a bioweapon could have been referred to the International Court of Justice. Secondly, the millions of deaths, if attributed to bioweapon usage, could have been taken up with International Criminal Court. However, there is no scientific evidence to suggest that COVID-19 was developed as a bioweapon nor does China recognise the authority of the International Criminal Court. So, while certain laws are in place, their even and justifiable application is a serious question.

**A question regarding the impact of COVID-19 on personnel of the PAF was directed to AVM M Z Faisal, enquiring if there was any data regarding the impact on operations and flying.**

AVM M Z Faisal responded that the number of PAF personnel including officers, airmen, and civilians who contracted COVID-19

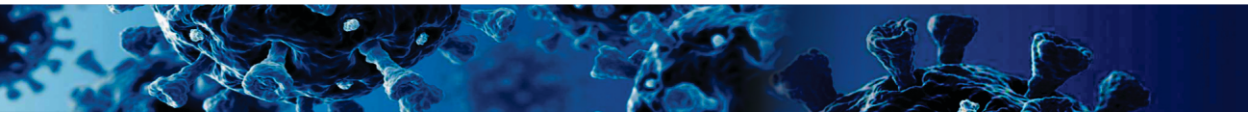


was around 10 percent. The death toll was fairly low, in the tens, and in the case of officers, the figure was even less than 10. With regard to PAF operations, the impact was not very significant, and operational readiness was not compromised. The day-to-day Base activities continued with caution on large gatherings etc. This is not to say that there was no impact at all, but it was not so significant as to have created any adverse effect on the operational routines and readiness. This is because the domestic SOPs and restrictions were very comprehensive. The entry/exit controls at the Guard rooms were also very strict.

President CASS Lahore, Air Marshal Asim Sulieman also added that stringent safety protocols were implemented and adhered to, and quarantine facilities were also set up at bases. By sound implementation of strict rules, regulations, and SOPs, operations continued without any major implications.

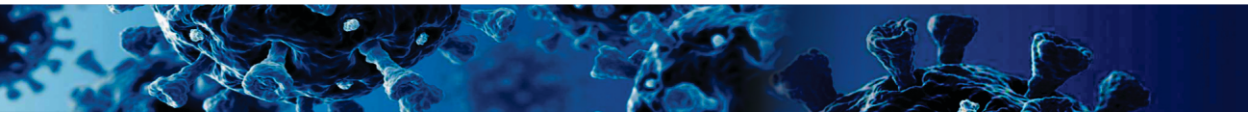
**Another question posed was how developing countries like Pakistan could not get hold of vaccines, despite WHO-founded initiatives such as COVAX (a global risk-sharing mechanism for pooled procurement and equitable distribution of COVID-19 vaccines). It was asked why countries like Pakistan should not lay emphasis on regional cooperation with regional countries rather than making policies that are global.**

AVM M Z Faisal, answering part of the question, stated that the importance of relations with neighbours and regional countries is extremely important. But in the globalised interdependent world,



nations are required to have good relations with the entire world and not just the region. This is especially true from the perspective of COVID-19. The pandemic has shown that countries with weak economies, industrial bases, and governance struggled to cope with the pandemic's challenges. Underdeveloped or developing countries are not able to weather pandemics independently and need international assistance in multiple domains. Even countries like the USA struggled to face the challenge of COVID-19, although in that particular case, it was less an issue of resources and more of ad hoc planning. The Trump administration created an ad hoc task force that comprised almost exclusively of public health and infectious diseases experts. It took them a considerable time to realise that a "whole of government" approach is needed and representation from all important state departments is required. Pakistan also faced the challenge of negotiating COVID-19 with the bare minimum of resources in hand, especially the struggling economy and the healthcare infrastructure. Therefore, Pakistan needs to have proactive diplomacy and friendly relations with all the countries of the world and not just the region. The speaker said that relations with China stand out as very important from the perspective of fighting COVID-19.

Dr Faisal Sultan, speaking about regional vaccine hubs, added that in a pandemic situation, cooperation and collaboration should be on a global scale rather than being confined to regional states. However, he also illustrated those countries such as Canada which had booked five times the number of vaccines they needed, failed to



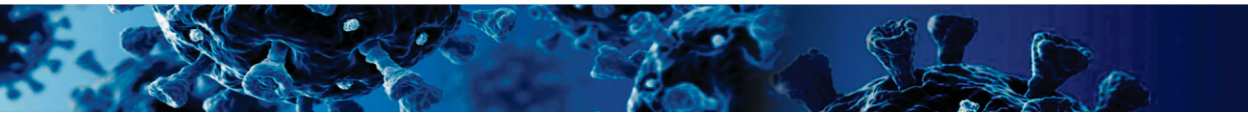
procure them, and thus the WHO put forward the idea of regional vaccine hubs that would cover the needs of their surrounding region, easing any supply issues. The only issue that needs to be considered is that, in difficult times, people make decisions from nationalist perspectives.

**Dr Faisal Sultan was asked about the comparison of the prevalence of COVID-19 in rural and urban areas.**

He responded that according to the data, the initial waves were focused almost entirely on urban areas, but subsequent waves also saw spread outside of urban populations, including larger towns, but the ratio was primarily tilted towards the urban side.

**Another question posed talked about utilising recent developments to tackle recurring diseases such as dengue, malaria, and typhoid, as was done by the introduction of genetically engineered mosquitoes to eradicate malaria.**

Dr Faisal Sultan responded that very ambitious, operationally robust, and professionally sound, prepared plans are available for Tuberculosis, Malaria, and HIV. But unfortunately, the government could not allocate the required funds due to the ongoing pandemic. Tapping an alternate revenue source by taxation of tobacco and sugar drinks was considered that could be allocated to health for funding these programs. The prime minister and the finance minister had agreed to introduce this bill in the summer of 2022 but then the government changed. With the change in government, it is unclear



how much funds will be allocated to the health sector. But programmes dealing with hepatitis, tuberculosis, HIV, and malaria are being funded by donors, who have their own priorities.

## ADMINISTRATIVE

### 1
### Strengthen the Biological Weapon Convention

The 1972 Biological Weapon Convention needs to be strengthened to an appropriate level in areas of transparency, verification, and against the expected misuse of biotechnology.

### 2
### Formulate National Biodefence Strategy

Pakistan may consider formulating a national biodefence strategy like the Americans. It should be a single document along the lines of a war plan which should orchestrate a full range of actions, and activities across the entire spectrum of biological threats.

### 3
### Review the National Disaster Management Authority (NDMA) Act

The review should focus on strengthening the legal framework of the NDMA, clarifying its mandate and scope, and establishing clear lines of authority and accountability for the efficient mobilisation of resources to stakeholders.

## ECONOMIC

### 1
### Economic Strength

A 15-year economic growth game plan finalised by specialist economists, approved with political party consensus, and protected by constitutional measures should be put in effect under a strict watchdog.

### 2
### Economic Policy Responses

Fiscal policy should have enough space for an economic stimulus package. The monetary policy should ensure adequate liquidity in the financial system for maintaining financial stability during pandemics.

3

### Enhance Social Protection Systems

Pakistan should prioritise building robust social protection systems, such as cash transfers, food subsidies, and unemployment benefits.

## HEALTHCARE

1

### Institutionalise the Mechanisms of the Epidemic/Disease Control Centres

The resourcing and staffing of the newly formed centres, including the Centre for Disease Control (CDC), the Health Data Centre, and the National Vaccine Centre should be prioritised to deal with future health emergencies/pandemics.

2

### Reform the Drug Regulatory Authority

The reform areas should include governance, pricing of drugs, and stockpiling of relevant medications. As against a typical bureaucratic oversight, a professional board of medical, pharmaceutical, and diagnostic experts should be constituted to oversee the operations of the Drug Regulatory Authority of Pakistan (DRAP).

3

### Upgrade the Data Flow Systems in Pakistan

Establish a streamlined mechanism to receive and aggregate data, particularly in the areas of disease detection and capacity monitoring of health facilities. Integrate the PCR test results into the polio dashboard.

4

### Reduce Reliance on External Sources for Vaccines

Enhance domestic vaccine production by incentivising private pharmaceutical companies to manufacture domestically. Promote innovation and research in the field of vaccines by bringing academia and industry together.

5

### Capacity Building of the Public Health Care System

As and when the fiscal space allows, government to allot four percent of the GDP to the public health system as against one percent in 2019 and 2.2 percent in 2022.

6

### Yearly Mock Drill

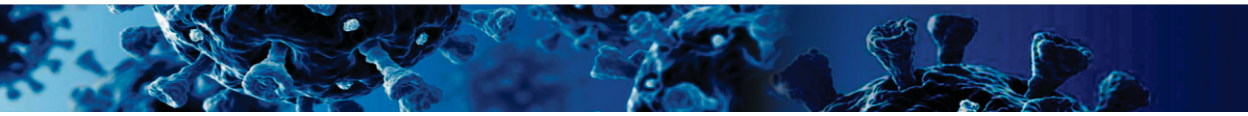
To enhance our speedy response to health emergencies/epidemics, a yearly mock drill is recommended to test and improve our systems.

## PROFILES OF SPEAKERS

**Dr Faisal Sultan**
Chief Executive Officer
Shaukat Khanum Memorial Cancer Hospital and Research Centre.

Dr Faisal Sultan is an infectious diseases physician. He is a graduate of King Edward Medical College in Lahore and subsequently trained in the United States in internal medicine at the University of Connecticut and in infectious disease at Washington University School of Medicine. He is a diplomat of the American Board of Internal Medicine in the fields of internal medicine and infectious diseases. He is a Fellow of the Royal College of Physicians in Edinburgh, UK and the College of Physicians and Surgeons in Pakistan.

He has worked as an infectious diseases specialist at the Shaukat Khanum Memorial Cancer Hospital and Research Centre since 1995; served as the Medical Director of the Hospital from 2000 to 2002 and as the chief executive officer from 2003 until August 2020. After the onset of the coronavirus pandemic, he was appointed as the Prime Minister's Focal Person on COVID-19 in Pakistan and later served as the Special Assistant to the Prime Minister on National Health Services in Pakistan from August 2020 to April 2022. He resumed his role at Shaukat Khanum Memorial Cancer Hospital and Research Centre in April 2022. He has been a trainer and examiner



in Infectious Diseases for the College of Physicians and Surgeons of Pakistan as well as a member of technical advisory committees for the National AIDS Control Program, Pakistan Medical Research Council, Pakistan Science Foundation, University of Health Science of Pakistan and the School of Biological Sciences, University of the Punjab, Lahore, the Punjab Healthcare Commission and on Human Papillomavirus Vaccine Advisory Committee [HVAC], WHO and has authored multiple scientific publications.

He was part of the Core Group for setting Pakistan's National Accreditation Standards for Hospitals, Ministry of Health. He has served on the Prime Minister's task force on health and as chairman of the board of governors at Medical Teaching Institute Khyber Teaching Hospital Peshawar as well as on the steering committee for Punjab Health Strategic Plan.

**Dr Muhammad Ashraf Chaudhry**
Professor and HOD of Community Medicine CMH Lahore Medical College

Dr Muhammad Ashraf Chaudhry is a highly qualified, renowned and experienced Public Health Professional holding degrees of MBBS, DPH, MPH (USA), M.Sc (Adv Med Adm) and FCPS. He did his MBBS from Quadi-i-Azam Medical College, Bahawalpur in 1979, a Diploma in Public Health (DPH) from Punjab University in 1986, a Masters of Public Health from the United States in 1988, and M.Sc. Medical Administration from Quad-i-Azam University in 1997 and FCPS from College of Physicians & Surgeons, Karachi in 2001.

He has served in the Armed Forces for about 25 years on various Administrative Teaching appointments. He joined CMH Lahore Medical College as a Professor and HOD of Community Medicine in 2010. He has written more than 200 articles in various newspapers on important public health issues in Pakistan to raise awareness among the public. He is also the author of two books. He has supervised several Master of Public Health dissertations at the University of Punjab and the University of Health Sciences, Lahore. Dr Ashraf is also the supervisor and examiner of FCPS.

His 56 research articles have been published in various reputable national and international medical journals. He has conducted more than 50 seminars/workshops.

**Air Marshal Asim Suleiman (Retd)**
President CASS, Lahore

Air Marshal Asim Suleiman HI(M), S Bt, IS (Retd) graduated from the Pakistan Air Force (PAF) Academy in 1978 and has flown a wide assortment of fighter aircraft from the PAF's inventory during his flying career. Air Marshal Asim Suleiman (Retd) is a graduate of the National Defence University, Islamabad and Defence Services and Staff College, Dhaka. He holds a master's degree in Defence and Strategic Studies from Quaid-i Azam University, Islamabad.

He has been a part of several Operational and Training Squadrons, including the Combat Commanders' School as an instructor. His command assignments include command of a Combat Squadron and an Operational Base. He served as an Air Adviser at the Pakistan High Commission in India. His numerous staff appointments include serving as Staff Officer in different capacities to three Chiefs of the Air Staff, Director-General Air Intelligence, Deputy Chief of Air Staff (Support) and Deputy Chief of the Air Staff (Administration). After retirement, he served as Director General of the Pakistan Civil Aviation Authority. He was also nominated as Chairman PIA. Air Marshal Asim Suleiman (Retd) is a recipient of the Hilal-i-Imtiaz (M) and Sitara-i-Imtiaz (M). He was also awarded the Sitara-i-Basalat and Imtiazi Sanad.

**Air Vice Marshal M Z Faisal (Retd)**
Director, Warfare and Aerospace
CASS Lahore.

AVM M Z Faisal served in the Air Defence branch of the PAF from 1985 to 2019. AVM Faisal holds a master's degree in War Studies, a master's degree in National Security & War Studies and an Executive Master's degree in Business Administration. He is a graduate of the Combat Commander Course, and an Asghar Khan Trophy holder at the Air War Course.

AVM M Z Faisal has extensive command, staff, and instructional experience on an assortment of Air Defence systems. He commanded two radar squadrons, a Generic Mission Control Centre, a Sector Mission Control Centre, and the Headquarters Air Defence Command.

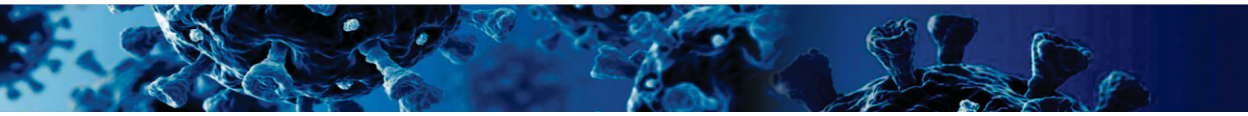
The officer remained associated with studies and projects encompassing the Air Defence of Pakistan and the Air Defence Doctrine, Defence of National VAs/VPs, and the Human Security state in Pakistan. He has participated extensively in the evaluations of Western and Chinese air defence systems.

**Dr Ghulam Mohey-ud-din**
Director, Economic Affairs
CASS, Lahore

Dr Mohey-ud-din has a prolific portfolio of scholarly publications and technical reports. He was a recipient of a gold medal for academic excellence in his master's degree, and also a recipient of HEC's indigenous PhD Fellowship. With a Doctorate in Economics from GC University Lahore, Dr Ghulam Mohey-ud- din has a thorough command of theory and application of economic research, applied econometrics, and data analysis.

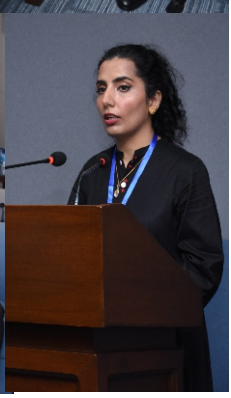
His rich experience encompasses working with academia as well as the public and the private sector, including the Government of Pakistan, the Government of Punjab, The Urban Unit, Meinhardt Group, and renowned universities, among others. Previously, Dr Mohey-ud-din served the Urban Unit – P&D Board Government of Punjab as an 'Urban Economist' and led the socioeconomics team and also headed the R&D cell of the Punjab Small Industries Corporation (PSIC) Lahore.

He has published one book, contributed a chapter in another, authored over 15 peer-reviewed journal articles, over 10 official/technical reports, and 3 conference papers.



Throughout his career, he has been part of projects with the World Bank, UNDP, GIZ, and FCDO (DFID) in various capacities (such as team lead, lead researcher, urban economist, economic development expert, social sector expert, development economist, and transport economist).

# GALLERY




IMPLICATIONS OF A PANDEMIC
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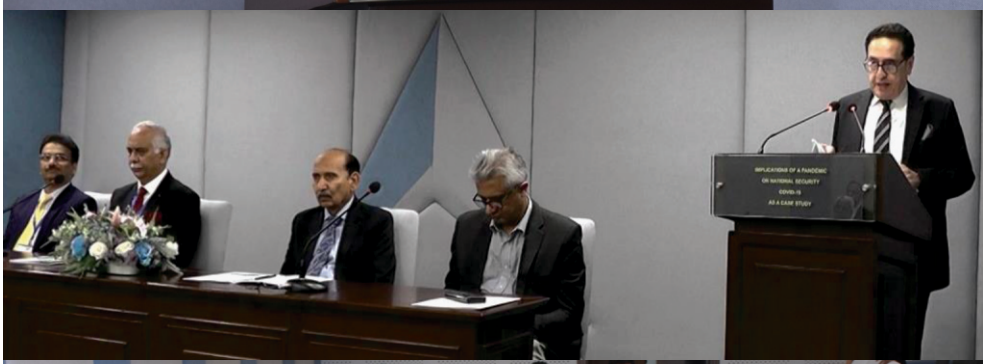
COVID-19
AS A CASE STUDY



## Implications of a Pandemic on National Security
## Covid-19 as a Case Study

***"Everything we do before a pandemic will seem alarmist, and everything we do after will seem inadequate."***
*– Dr Mohd Ashraf Ch, HOD of Cmty Med, CMH Medical College Lahore*

***"The current per capita health expenditure of Pakistan is very low, which is 43 dollars in total whereas the public sector has only 9 dollars."***
*– Dr Faisal Sultan, Former SAPM & Govt Focal Person on Covid-19*

***"Till the 19th-century, military planners used to assume that 4 out of 5 losses of life would be due to diseases and just one out of five to combat."***
*– Air Marshal Asim Suleiman (Retd), President, CASS Lahore*

***"COVID-19 has highlighted grave concerns about the dual-use potential of biotechnology and genetic engineering."***
*– AVM MZ Faisal (Retd), Director , CASS Lahore*

***"The pandemic triggered the largest economic crisis of the century."***
*– Dr Ghulam Mohey-ud-din, Director , CASS Lahore*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