

COVID19 | THE GAME CHANGER



In the arts of life man invents nothing; but in the arts of death he outdoes Nature herself, and produces by chemistry and machinery all the slaughter of plague, pestilence and famine.

George Bernard Shaw

— 1903 The Devil to Don Juan. Man and Superman, act 3.

The year 2020 begins with strange news coming from the bustling city of Wuhan in central China. Health authorities in China say that many people are being treated for pneumonia like condition from an unknown source. Some say the sick had visited a live animal market in Wuhan, others claim that it is SARS again. Initial reports also claim there is no evidence of the virus spreading from person to person. A week later it is called an epidemic and hundreds are getting sick in the city. Another week and the World is waking up to thousands of infected and hundreds of dead.

Soon many theories abound regarding the origin of the mysterious disease. Is it from the bats or snakes, is it an experiment, or is it a Bioweapon? To compound the many theories, it turns out that Wuhan does have a Bio Safety Level 4 (highest containment level) research laboratory. Then there are the “I told you so” experts who claim that this is nothing but blatant Biowarfare being waged upon the world. By whom and upon who can be anybody’s guess. For now, conspiracy theories and claims have been debunked and proven false¹. The current situation is that most countries are battling to save their citizen and struggling to honourably dispose their dead. The virus has shaken the world, sunk economies and rendered countless out of jobs. *A humble cough has made countries cough up billions to save lives.*

Bio Warfare and Bio Terrorism

Biological weapons such as disease pathogen and toxins have been used since many centuries. Over the

years, science and technology has aided creation of deadlier pathogen which do not have a cure. Mankind has been dreading biological weapons like Smallpox, Plague and Anthrax. Diseases outbreaks like Ebola, SARS, Swine Flu (H1N1) and others have had huge impacts not only on social lives but also on economic and political strengths of countries.

International protocols and treaties have been signed to curb use of biological weapons. Increasing fear that biological weapons may be used against military and civilian populations is fostering efforts to develop adequate protective response strategies. While the threat of biological warfare has diminished, the new threat of bioterrorism is significant. Small quantities of lethal biological agents can be easily concealed, transported, and released into unsuspecting susceptible populations.

The spectre of Bioterrorism is another security issue. Preparedness for bioterrorist attacks and early recognition of specific agents are essential for public health. Emergency departments may play an important role in this field. The large spectrum of bioterrorism involves not only disastrous terrorism with mass casualties, but also micro events using low technology but producing civil unrest, disruption, disease, disabilities, and death.



Coronavirus - so named because of the crown like

Biosecurity in India

Biosecurity means putting in place procedures or measures designed to protect the population against harmful biological or biochemical substances. These preventive measures include a combination of systems and practices put in place at bioscience laboratories, by border control, customs agents, agricultural and natural resource managers to prevent the spread of dangerous pathogens and toxins.

India has a robust legislative system to combat Biosafety issues, refined and strengthened over the last four decades. National biosafety and bio-waste activities are governed by legislation through State Health Ministries and Environment Ministries (Pollution Control Boards). Under the Integrated Disease Surveillance Programme, a network of public laboratories with biosafety practices and infrastructure is being set up. Biosecurity has sadly remained a stepbrother of Biosafety.

Key ministries involved with Biosecurity and Biosafety are Ministry of Science and Technology (MoST), Ministry of Health and Family Welfare (MoHFW) and Ministry of Environment, Forests and Climate Change (MoEFCC). Many laws and regulations covering Biosecurity from WMD, laboratory biosafety and Biosecurity, vaccine development, disease research and DNA testing are managed by these ministries through the Indian Council of Medical Research (ICMR), Council of Scientific and Industrial Research (CSIR) and Defence Research and Development Organisation (DRDO).

International Obligations and Support

India has signed and ratified the Biological and Toxins Weapons Convention (BTWC) of 1972. It has also declared its support to all international efforts for strengthening norms against bioweapons and bioterrorism, while maintaining a credible deterrent against the use or the threat of use of WMDs against India. India has also expressed its support for UNSCR 1540. India is especially concerned about export controls on bio weapons. It has therefore been exercising control over export of Special Chemicals, Organisms, Materials, Equipment and Technologies (SCOMET), which includes micro-organisms/ toxins, including bacteria, fungi, parasites, viruses, plant pathogens, and genetically modified organisms.

Clade X Simulation – Steps to Prevent and Respond to Pandemics

The Johns Hopkins Center for Health Security hosted the Clade X pandemic tabletop exercise on May 15, 2018, in Washington, DC². The purpose of the exercise was to illustrate high-level strategic decisions and policies that the USA and the World will need to pursue in order to prevent a pandemic or diminish its consequences. The scenario was based on a novel strain of Nipah virus and set at 20 weeks from onset to termination. At the conclusion of the scenario there was no virus; however, 150 million people were dead across the world, including 15 million US citizens. Alas, going by the current situation, the lessons from this exercise were not learnt, especially so by the US.

Enhancing our Preparedness

It would be in order to put on record heartfelt appreciation and praise for the concerted actions in response to the Covid19 pandemic by Indian authorities, commendable actions by state administrations, most stakeholders and great support by the Public. Indian medical fraternity, and research teams have been rock stars. A special salute to the common grocery, vegetable and medicine vendors who have braved the administrative restrictions and onslaughts of panic buyers to provide us succour during the long lockdown period. Kudos to volunteer groups who have worked days and nights to deliver food to the needy and develop applications and models based on crowd sourced data to enable optimal administrative and medical coverage of hotspots³. Till now, we have been two steps ahead and have managed to keep the curve relatively flat.

As Covid19 rages on and the figures mount by the minute, we need to take stock of what needs to be corrected. In many aspects it has been a **game changer**. Salient aspects that emerge and need urgent attention are as discussed below.

- ⇒ Create a comprehensive Chemical, Biological, Radiological and Nuclear (CBRN) Security paradigm aligned to the National Security paradigm.
- ⇒ Develop and implement a National Biosecurity strategy covering aspects such as threat analysis, risk assessment, research and capability enhancement.
- ⇒ Develop a sound Bio threat Intelligence system integrated into existing intelligence networks.



Coronavirus Response Team in Action

- ⇒ Revise relevant acts and laws to mandate rendering of essential services in National emergency situations, especially of CBRN nature.
- ⇒ Develop a national plan to harness effectively all healthcare assets in a catastrophic pandemic or mass casualty event.
- ⇒ A National Biosecurity (nee CBRN) Experts group be created under the PMO. Other experts, scientists and agencies can to provide advice on specialist issues. Nodal Ministries, like MoEFCC, MoHFW or MoST may be nominated to deal with various aspects, tasks and activities and to develop plans and SOPs.
- ⇒ Strengthen the National Health Security system. Build a deployable clinical capability for National infectious disease emergencies.
- ⇒ Ensure the National security community is well prepared to prevent, detect and respond to infectious-disease emergencies. Training and equipping of CBRN teams of NDRF and SDRF Battalions for optimal response is imperative.
- ⇒ Develop the capability to produce new vaccines, drugs and rapid diagnostics for novel pathogens within months, not years.
- ⇒ Invest more in a robust, highly capable national public health system that can manage the challenges of pandemic response.
- ⇒ Invest and develop a robust and sustainable domestic industry capable of R&D and producing equipment for detection, testing, analysis, protection, decontamination and medical management in pandemic situations.
- ⇒ Invest in wider research on CBRN subjects by creating academic hubs or centers of excellence with Global outreach.

Developing a Biosecurity Culture.

There is a serious need of developing a Biosecurity culture amongst Government agencies, corporate industry and various stakeholder organisations. Coronavirus crisis has helped raise awareness to a good extent. Such security culture should seep through to society and be included in High School and College curricula with the Disaster Management studies. Medical colleges must train doctors and paramedics/nurses in not just Biosecurity but all aspects of CBRN casualty management.

Conclusion

The current Coronavirus crisis has highlighted many lessons which need serious thought and concerted action. Bioterrorism is a reality and its effects may be worse than the Covid19 pandemic. It is time we woke up to Biological threats and strengthened our systems to prevent them. To implement stringent Biosecurity guidelines and to mitigate biological threats, a holistic approach is required on part of the Government, medical and research agencies and other stakeholders. Covid19 is a wakeup call, a Game Changer. Hope we heed to it.

1 Wikipedia page refuting the various conspiracy theories on the origins of Covid19 virus. https://en.wikipedia.org/wiki/Misinformation_related_to_the_2019%E2%80%9320_coronavirus_pandemic
 2 The Clade X Exercise details from John Hopkins Center for Health Security. http://www.centerforhealthsecurity.org/our-work/events/2018_clade_x_exercise/about-clade-x
 3 Sapio Analytics is one such agency actively aiding the Government agencies in community outreach for Covid19. <https://www.sapioanalytics.com/covid-19-decision-support-system/>



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