

# CoVID-19 Outbreaks, a Wakeup Call for Health and National Security Preparedness; How Prepared is the World for a Bioagent Medical Emergency

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## Abstract

There is need for nation states, governments and health policy makers on preparedness, to focus on ensuring border security and need for effective global travels at point of entry. Like this current CoVID-9, past global pandemic like the Plague, Severe Acute Respiratory Syndrome (SARS), Middle East Respiratory Syndrome (MERS) etc., the role of human migrations, and ever necessary global travels remain a major “vector” for the dissemination of infectious disease, and possibility, bioterrorism/or bioagent. Question is, with the media hyping, over dependence of nations on china for major manufacturing needs, secrecy by countries on CoVID-19 source, limited medical essential resources, and with open border policies, is the global world prepared for a bioagent medical crises?

**Keywords:** 2019-nCoV; CoVID-19; Health and National Security; Bioagent Medical Emergency; Preparedness

## Introduction

### Coronavirus disease 2019 (CoVID-19): Source/Origin of 2019-nCoV virus

It is now widely known that the currently global health problem and to some extent, economical threat, is the 2019 Coronavirus disease (CoVID-19) cause by a virus known as 2019 novel coronavirus (2019-nCoV), lately known as SARS-CoV-2, for its genetic similarities with SARS virus. It is reported to have originated from Wuhan, in the Hubei province of China. Many have claimed it arose from an animal/seafood market [1,2] and later mutated into human-human mode of transmission [2]. However, some are questioning this as the origin of the virus; 1209-novel-coronavirus or SARS-CoV-2, speculations of it being possibly synthesis from a laboratory, [3], or from an experimental animal that was then taken to this market for food [4]. Whatever the “origin”, the epicenter of this novel coronavirus, is Wuhan, in China.

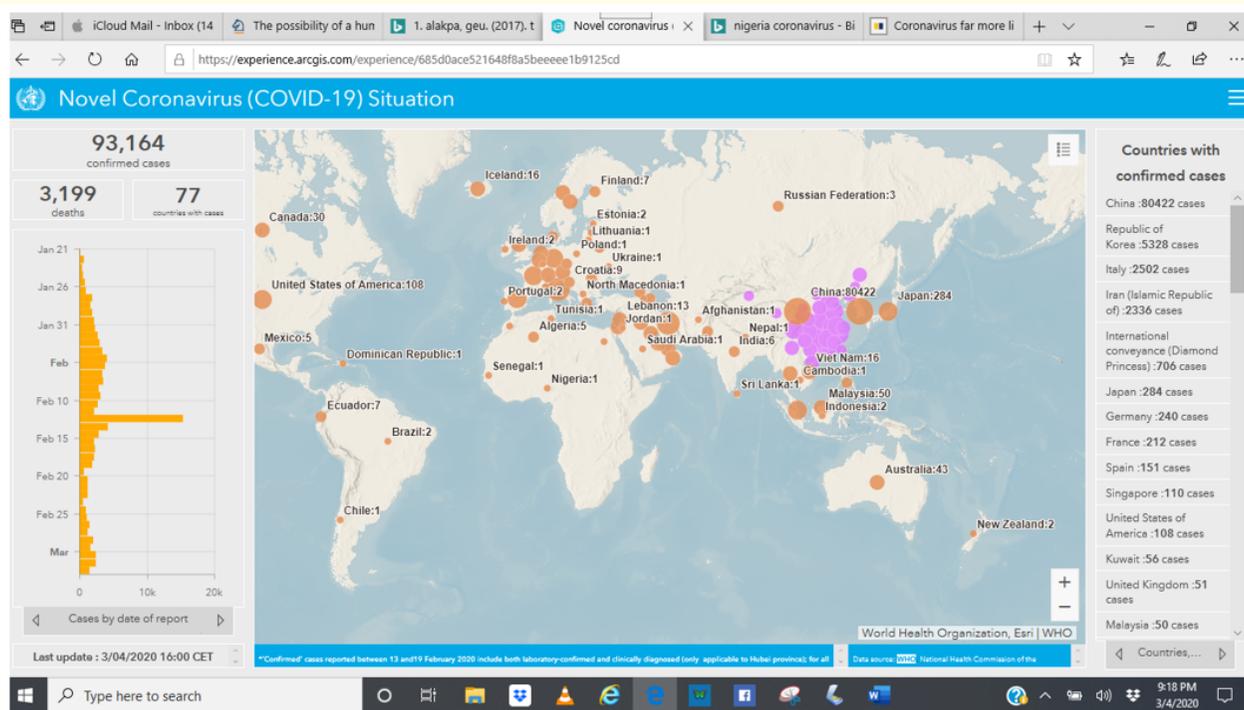
The genetic sequence analysis of this 2019-nCoV is said to be closely related to SARS virus (SARS-CoV), hence it's being named as SARS-CoV-2, and MERS viruses (MERS-CoV) being a betacoronavirus, with all three viruses originating from bats [2], but as at now evidence is suggesting novel coronavirus 2019 is like either MERS-CoV or SARS-CoV in terms of severity and transmissibility. It is claimed that, the CoVID-19 is contagious even while at the incubating phase, unlike SARS [2]. Scientist study from China was reported by “The Newsmax News Network” quoting from the South China Morning Post, stated, the detailed of the study indicated that the 2019-nCoV virus has “HIV-like mutation, implying that, this novel virus may be significantly different from the SARS virus already reported, in how it infect human cells [5,6]. According to the report from “South China Morning” [6], it was reported that, the new coronavirus has the ability to bind with human cells by 1000 times compared with SARS virus according to the study carried out by Professor Ruan Jishou and his team at the Nankai University in Tianjin. This finding is reported to have been confirmed by another team of researchers led by Professor Li Hua from Huazhong University of Science and Technology in Wuhan, Hubei province [6].

For now, the bat is the primary host of the SARS-CoV-2, i.e. 2019-nCoV, but if its transmission is directly from this host or via an intermediary host. Route of transmission is via respiratory droplets or via contact on objects contaminated with droplets from patients with CoVID-19, with incubation period between 3 to 14 days, but unlike SARS-CoV, 2019-nCoV is very much contagious while in the latency, asymptomatic period [1]. The genetical composition of this 2019-nCoV is reported to be significantly different from SARS related coronaviruses (SARSr-CoV) or MERS related coronaviruses (MERSr-CoV) by Jin., *et al* [1]. The 2019-nCoV is an enveloped RNA virus with particles round or oval, but polymorphic with diameter between 60 nm - 140 nm and it “can be found in the human respiratory epithelial cells 96h after *in vitro* isolation and culture” [1. p4].

However, a lot is yet to be fully understood, like definitively the source of this virus, how it is transmitted via the human-to-human route, the duration of the discharge of the infective virus particles from infected cases, or is this virus mutating and if such mutations reflects its ability to adapt to host?

### Current state of CoVID-19 global distribution

As at today, March 4<sup>th</sup>, 2020, there are over 70 countries with infected cases reported, over 93,000 reported cases and over 3000 deaths from this public health emergency of international concern, by the World Health Organization [2].



inhalation, contact with soiled objects and transfer via contact to skin, face etc. Are cases currently being reported a confirmation of the theory that, this virus (2019-nCoV) can be transmitted without direct contact with anyone with prior travel to China? Could these cases with no prior contact with an infected case from China, just be a confirmation of asymptomatic carriers of 2019-nCoV/SARS-CoV-2, disseminating the virus to others unknowingly, as now being postulated? Since the pathogenesis, or pathogenicity, of this novel virus is still being studied, certain facts remain undisputable, that is, its dissemination must be halted or contained.

### **From China to the World**

From its first report on 31<sup>st</sup> of December 2019 in Wuhan, China [7], virus has disseminated from China to over 70 countries and practically over four continents at least, hence in many quarters, some individuals are calling for CoVID-19 to be called a pandemic, which the World Health Organization (WHO) is yet to oblige. In Nigeria, one of the African countries with positive cases of CoVID-19, patient zero is said to have travelled from Italy already with CoVID-19, to Lagos Nigeria [8]. In the USA, flights from China with possible carriers were directed to a military base in California, where passengers were quarantined for observation, some were reported to have tested positive for the 2019-nCoV infection, and many more cases have been reported in other states, like New York, California, Washington, New Jersey etc.

While “community transmitted” cases are currently being reported in many countries, it is almost indisputable, that like in all past respiratory diseases, global transmission of these disease has been linked with human global travels, with many arriving at recognized ports of entries (PEs), making illegal migration or arrival outside legal PEs, even a much more health security issue, if not potential national security problem. The CoVID-19 outbreaks has been reported to have some direct negative effects on economy of countries directly affected, and global market, following globalization and the intertwine of global markets [9,10]. It is reported that the U.S. depend on china for over 80% of its antibiotics, vaccines and many more medically essential intervention items [11,12], so this thus raise the questions how ready is the U.S. in healthcare management of this infectious diseases, worse a bioware graded agent related medical emergency or pandemic? President Trump and his vice just stressed the importance to overcome this over dependency and called for the immediate need to have U.S. produce its medical essentials needs, like generic drugs, antibiotics, vaccines and even facemasks.

### **Interventions**

Current medical intervention of this novel coronavirus disease, CoVID-19, like all past major global medical emergencies is being dealt with, employing general basic public health approach of identification of disease sources, and causative infectious agent, identification of cases, close contacts, Isolation and quarantine and medical interventions: Treatment or vaccination. While, the identification of the actual sources and actual makeup of this virus, are still being understood, basic public health approach, remains the most viable, realistic course of action. How did the virus get into the animals or, and now, it got from the animal into human case zero in Wuhan, are still open to debate? Steps like the following are being employed and recommended by public health experts.

**Travel restrictions:** Preventing or limiting travels of people from and to places with CoVID-19. The Chinese despite late reporting to the global community, must be praised for first restricting movement around the Wuhan, then to other places with reported cases of this disease. They followed that with suspension of travels, from Wuhan to other cities or countries, thus mitigating risk of dissemination to other parts and countries. However, since the pathogenicity of the virus and the disease was still being determined and the fact you cannot have 100% restriction of human movement, many CoVID-19 cases would have escaped this travel or movement restrictions and moved to others cities, especially asymptomatic cases (those not with visible signs or symptoms of the disease).

**Quarantine:** A process where infectious cases or suspected close contacts are either voluntarily or involuntary isolated from others, usually for a period for observation or/and intervention. The Chinese and many countries have excelled in this approach of curtailing the spread of the CoVID-19, via their force quantization of citizens by especially when laboratory confirmed positive. Self-isolation at homes

by both positive cases and their close contacts. Is now being forcefully encouraged especially in the U.S. Similar protocol has been followed by almost every other country with any reported case. Cruise ships have had their passengers' sort of quarantined on the ship, but the one on the Japanese waters, turned out not to be too effective, as cases of CoVID-19 were later reported to have been released into the community.

**Possible treatment or medical intervention:** For now, there is no known vaccine or specific and sensitive medication against CoVID-19, however, many countries have reported the use of an antiviral drugs like Favilavir, Remdesivir have been reported effectively employed in managing CoVID-19 [13-15] but the U.S. is still experimenting on some of these potentially effective antiviral drugs [16,17]. In the absence of any FDA approved drugs or vaccines currently, experimental drugs and preventive basic hygienic measures similarly employed against or to prevent common cold/Flu dissemination, is the CDCs' and U.S. recommendation to the U.S citizens, as the country tries to combat this CoVID-19. The U.S. government just signed a bill of funding, \$8billion for CoVID-19 management. Like every past pandemic, humanity will overcome and defeat this one.

### Questions arising

Many questions are floating all over, has the world curtail this public health emergencies of international dimension, some like:

- Did the world, especially developed countries, learn anything from the SARS, MERS epidemic that were implemented during this CoVID-19 health emergency?
- Is the World prepared for a bio engineered agent medical emergency? Absence or limitations of testing kits that are both specific, sensitive for this novel agent; absence or shortage of protocols, PPE and drugs, vaccines etc. due to over reliance for China for manufacturing?
- Already many are questioning the ability of the USA to handle and manage this COVID-19 should its current rate increase exponentially in the continental USA, especially as the National Institute of Health (NIH) and Trump's administration tries to tackle the current shortage or inadequate testing kits, increasing number of new cases being reported in more cities and states.
- Community spread of the CoVID-19 if no direct or indirect linkage to the Wuhan virus, now being reported to have of two different strains (L and S strains) [18], then where did these "community nCoV-19 (2019 novel coronavirus or SARS-CoV-2) originate from now being reported in the U.S., Korea, Nigeria, Iran etc., if no one travelled outside of the U.S. or these countries?
- How did the virus get into the numerous Cruise Ships now being refused docking in many cities and countries, and travelers quarantined on the ship?
- Is the virus a laboratory engineered virus, that was accidentally or intentionally released into the communities?
- Are there truly two strains of this novel Coronavirus, as being reported?
- Are the U.S. Hospital beds capacity adequate to handle a large scale explosion of the CoVID-19, if not, how then would they be able to cope should there be bioagent pandemic medical emergencies?

### Suggestions

The importance of an unsuppressed scientific investigation into the origin of this novel coronavirus cannot be overemphasized, especially as it relates to how the world mitigates or curtail the effect of this public health emergency of international dimension. The world

must not have a repeat of what happened in 1947 where the government via its defense departments, suppressed the truth as regards the identification and downing of Unidentified Flying Object (UFO)/Flying Saucer. For years, the citizens, were called “conspirators, or conspiracy theorists, and others intimidated to shut up. Some allegedly were “silenced”/killed so as to suppress whatever happened at Roswell, New Mexico, but in the late 1990s and early 21<sup>st</sup> century after the declassification of top government documents, the UFO phenomena and documentations by citizens were confirmed to be correct [19-25]. Many have accused the Chinese of withholding the truth about this novel coronavirus or for not reporting it earlier to the world. All unknowns should be freely given the thought and subjected to real rigorous scientific investigation and analysis, to provide adequate transparency for all, by so doing would all be able to combat, fake or fabricated information or rumors that will become prevalent in the presence of censorship.

Countries, should starts diversifying from over reliance of their emergency products coming from one country, like what has happened now with over dependence on China for larger percentage of good and service by many countries, even the U.S. Which the Chinese stopping almost all travels, transportation, manufacturing and exportation was greatly affected especially at the earlier period of this public health emergency.

Governments should review their border security policies and be ready to improve in emergency hospital capacity holding treatment centers, material stockpiling up, combating the shortages of needed essential Personal Protection Equipment (PPE), and drugs. Citizens should be ready to be prepared, ready to adapt to immediate situation, media, instead of dissemination fear of hysteria by hyping the worst of situations, they can still report facts and hope, as more tilted negative, worse hysteria picture, would lead to unnecessary panic buying and hoarding, like now being observed with the scarcity of face masks, disinfectants etc., when basic preventive hygienic practices like hand washing, coupled with self “quarantine” or isolation, will go a long way to curtail the dissemination of this SARS-CoV-2. Citizens panic could lead to civil unrest and thus a national security issue, that will even affect the moral of uniform service members that would be employed to go enforce civil order and security.

## **Conclusion**

Health security is the best foundation/defense against national security breaches, as there is a direct link between national security and health security. While it is natural for citizens to be afraid, about this CoVID-19, it is best left to the government and especially the media not to exaggerated or exacerbate such panic or hysteria by false hoods. First, scientifically, you cannot develop a vaccine against a novel virus, whose antigenic property (proteins needed to be virulent, incubate and cause disease) is still changing (mutating) or yet to be fully and definitively identified. In order to develop the best specific, sensitive and safe drugs or vaccine, and it takes time. Second, Coronaviruses have certain similarities and many preventives measures can and is being employed to mitigate dissemination, while scientists, pharmaceuticals industries develop the effective medical treatment for it. It is time to bring back antibiotics, antiviral and other medical drugs manufacturing, here in the country. This author leaves each person to make a judgment call as to the question, if the global world is collectively ready to handle a bioagent medical emergency?

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Not Applicable.

## **Consent for Publication**

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Not applicable.

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