

Novel Coronavirus (nCoV-19): A Challenge to Public Health Practitioners

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ABSTRACT

Towards the middle of the 20th century, improvement in the area of public health practices such as sanitations, the wide spread used of antibiotic drugs as a treatment method, potential recognitions of hazard, timely identification of outbreaks of infectious diseases, immediate isolations and quarantine practices, prompt contact tracing and vaccinations as preventive therapy had considerably reduced the number of people who died from pathogenic microorganisms. Throughout history, public health effort has been directed toward the control of transmissible diseases, reduction of environmental hazards and provision of safe drinking water and housing. These measures had led the sole foundation for the control and prevention of water and food borne diseases and some few neglected tropical diseases. However, today we are still witnessing it periodic backs slash at time, and in sporadic manner, due to poor public health measures and practices, weak health systems research and dilapidated health institution especially in some developing nations of Africa and Asia. Infectious diseases especially (viral infection) have for centuries ranked with fear, war and famine as major threats and challenge to public health movement as well as progress and survival of the human species. That is a reminder to public health practitioners, that communicable diseases must be a matter of concern.

This article is devoted to a discussion of the most recent catastrophic world-wide proliferations of novel coronavirus (nCoV-19). The challenge it imposed on public health practitioners and public health facilities along with the mechanism for prevention and control of the viral pathogen.

Keywords: COVID-19; Public health; Morality rate

INTRODUCTION

Public health

Is the science and art of preventing diseases, prolonging life and promoting physical health and efficiency through organized community efforts for the control of community's infections, the education of individual on the principle of personal hygiene, the organization of medical services for early diagnosis and preventive treatment of diseases in a community. The role of public health specialist in pinpointing out the outbreak of infectious diseases is illustrated in the work of John Snow, during the cholera outbreak of 1950 in England [1].

Public health event of international concern

World Health Organization described, public health event of international concern: as an extraordinary event which is determined, to constitute a public health risk to other nations through the international spread of disease and potentially require a coordinated international response to halt its proliferations [2].

NCov-19 mortality and morbidity

Mortality rate: Is to a large extent determined by access to and quality of health care. Right now, available statistics put the covid-19 virus mortality rate at around 2%. While, the true mortality of COVID-19 will take some time to fully understand, the data available so far indicate that the crude mortality ratio

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(the number of reported deaths divided by the reported cases) is between 3%-4%, the infection mortality rate (the number of reported deaths divided by the number of infections) will be lower. Despite this, the number of infection and deaths are rising every day, sometime dramatically.

Note: Mortality, morbidity and incidence of infectious disease is calculated by the following formula.

FACTORS RESPONSIBLE FOR THE WIDE-SPREAD OF nCoV-19

Break-down in public health measures and practices

Failure to take prompt public health measures particularly a backward nations of the world like Nigeria where the level of integrity, commitment, discipline and patriotism is lacking, had laid a sole foundation for the re-surgency of more virulent diseases such as Ebola virus and Lassa fever, including the preventable ones, the so-called childhood killer diseases such as polio myelitis, diphtheria, Tuberculosis (TB), whooping cough pertussis, German measles and small pox. As a result of recently simultaneous occurrence of these infectious diseases and the ongoing one, nCov-19 reveals weakness in our public health infrastructure in Nigeria, particularly Northern-Nigeria [4].

International travel

When people travel from developed to developing nations, they can encounter potential health problem. Public health has faced and effectively responded to a number of emerging threats in the recent past. The vector-borne Lassa virus, first discovered in Nigeria in 1969, primarily infected people in Nigeria and some few West African nations. But later, its spread had been reported in more than 20 countries as travellers began carrying infections worldwide. Ebola, another life-threatening infectious disease, discovered in Congo in 1976, became a global epidemic about five decades, when it spread across borders to the U.S. and other parts of the world. The current novel coronavirus (nCoV-19), outbreak is believed to have begun in December 2019 came into Nigeria via an infected foreign business man from Italy and also an ill traveller who returns from abroad from [1].

Corruption and politicizations of the virus

Lack of high-level government commitment and international collaboration.

International trade, tourism and exploitation

International trade and tourism contribute to the rapid spread of COVID-19. The amount of international travel is increasing each year. Millions of people are travel internationally each day for tourism, businesses, and exploration from county to country and or continent to continent. This has said to be driven force for the wide-spreads of novel coronavirus within a very short period of time [3].

Over-population and crowded environment

In last two to three decade we are doubled our population, thereby tripled the amount of food, water and land we used. Every four days, there is million more people (live-birth and dead) on the planet. The world as we know today, is witnessing rapid human population growth and massive movement from the rural area to urban centre. Thereby, creating chaos and crowdedness in most of cities of the world. In Nigeria for instance, the 1995-96 cholera outbreaks was said to affect most of the crowded cities like Kano and Lagos etc. many nations with rapid population growth have low standard of living poor health care delivery, whereas, those with low population rate have high standard of living, basic social amenities and access to qualify medical services at low cost or freely [5].

Immune-system deficiency

Central to this issue is the gradual degradation of the immune-system over time. whatever, for a reason not fully understood the immune-system losses both its ability to recognize the presence of pathogens that have entered the body and it ability to mount an effective response against the pathogens due to decreased activity of active immune-system cells and the inability of the existing cells to responds effectively. This is more pronounced in individuals with pre-existing medical condition such as (HIV/AIDS, TB, Pneumonia and Asthma).

Occupational exposure (Nosocomial infection)

According to antidoted report world-wide, from mid-December 2019 to mid-February 2020, about 2,000 people become infected with coronavirus (nCoV-19), while discharging their responsibility as health care workers. And the resultant mortality number about 400. Unfortunately, cross infection from patient-to-patient in a crowded ward as well as from doctors to their patient is also another source of concern, as only few hospitals have isolation ward. As a result, accidental exposure among health care workers, especially developing nations of the world in which Nigeria is among is very possible [6].

PREVENTIVE, PUBLIC HEALTH MEASURES AND CONTROL

It is important for the appropriate public health authority to be informed of the situation and take appropriate measures to protect yourself and your family. According to World Health Organization (WHO), this can be achieved through a combination of public health measures, such as quick identification of pathogen, diagnosis and management of the cases, identification and follow up of the contacts, infection prevention and control in health care settings, implementation of health measures for travellers, awareness-raising in the population and risk communication.

Identifying pathogens

The term pathogen can be applied to few organisms if one considers it to be an organism that always causes clinical symptoms. Early identification of infectious outbreak allows for timely implementation of public health measures, containment

and prevention. The major goal of public health practitioners is a prompt, precise identification and characterization of the pathogen involved in an infection so that to come with a measure that will halt the spread of the infections and to develop surveillance base strategy [7].

Diagnosis and management of the cases

Early identification of the causative agent of an infectious disease in individuals and population at large is of utmost importance. The success and accuracy of this test or laboratory examination of the viral pathogen is quite dependent on several quality of the specimen delivered to the clinical laboratory. According to NCDCP the specimens generally obtained from a patient would be one or more of the following: throat or nasal swab, sputum, (Nasopharyngeal and Oesophageal swab) biopsy, blood, faces and urine etc. it depends on the type of infection and the pathogen or suspected microorganism under investigation. Care must be taken to prevent contamination of the specimen by extraneous micro-organism after it is taken [8].

Identification and follow-up of the contact (contact-tracing)

A significant problem in controlling infectious disease is the presence of carrier in the population. Often individual with viral infection (nCoV-19) will normally continue mingling among other peoples 'toughing it out' with their symptoms' and tend to deny to themselves, their relations and others that they are infected with the virus. This is exactly what is happening, right now in Nigeria. And it is more pronounced especially in extremely fragile societies of the Northern region of the country. Unfortunately, these people can expose everyone they encounter [9].

Infection prevention and control in health care setting (nosocomial)

Since there is no single license vaccine, prevention of novel coronavirus (nCoV-19) at this time (amid of pandemic), is completely not feasible. Many of the respiratory infectious diseases, particularly those passed orally, are difficult to control even among the health care workers. Unfortunately, cross infection from patient-to-patient in a crowded ward as well as from doctors to their patients is also possible as only few hospitals have isolation ward as a result accidental exposure is very possible.

According to anecdotes report world-wide, from mid-December 2019 to mid-February 2020, about 2,000 health care workers become infected with coronavirus (nCoV-19), while discharging their responsibility as health care workers. And the resultant mortality number over 400 people [10].

Implementation of health measures for travellers

In every countries' of the world public health officials are working day and night to monitor the health conditions of the people and to clarify infectious diseases in order to proffers solution or institute measures for their control and to inform health policy decision makers., for example, immediate medical

examination for traveller this can be done at both entry and exist point [2].

Awareness-raising in the population and risk communication

According to WHO, Public health event often attract media attention and health officers might be asked to communicate with the media. Communication with the media is part of the communication strategy of an authority and it is the responsibility of senior management or designated. Trained health authority should be assigned this task. Media influence public perception and effective media communication requires good preparation, timely, accurate, clear, concise and credible messages. Any rumours, inaccuracies and misperceptions should be addressed as early as possible. The information given to media should fulfil information request and help to eliminate or reduce public fear or inappropriate behaviour [11].

ADVICE FOR THE PUBLIC

World Health Organization (WHO) suggested that if you are not in an area where nCoV-19 is spreading or have not travelled from an area where it is spreading or you have not been in contact with an infected patient, your risk of infection is low. However, if you are in an area where there are cases of this deadly virus then, you need to take the risk of infection seriously. Follow the advice and guidance issued by world health organization, national centre for disease control and prevention, state/federal ministry of health and or regional and local health authorities. Note: that this is a global epidemic, where there is no place, continent or region in the world without, the case of novel coronavirus infection [12].

PREVENTION AT INDIVIDUAL LEVEL

The best way to curtail the spread of the virus is to adopt the same preventive strategies used against SARS, MERS, Ebola and Lassa fever. The measures like personal and environmental hygiene should be practice such as: frequent cleaning of hands using alcohol-based hand rub, sanitizer or soap with running water; covering the nose and mouth with a flexed elbow, handkerchief or disposable tissue when coughing, sneezing; and or wear a surgical mask when going out to visit a friend, a doctor or mall for shopping and also avoiding close contact with anyone that has a high fever and cough. And finally make dispose of the used tissues, handkerchief and surgical mask in a trash bin immediately after using them. Moreover, to mitigate and halt further spread of the virus, some cities has long been isolated and quarantined in Nigeria [13].

Lagos which is believed to be the first city that recorded case COVID-19 viral infection in Nigeria has long been under total lock-down. After Lagos the federal capital, Abuja was the second city that went into quarantine since early march. Other cities in the country include: Kano, Adamawa, Rivers, Enugu, Katsina and Maiduguri are completely under lock down too.

Face mask

During normal day-to-day activities surgical mask cannot protect you from coronavirus. Medical health care workers wore it while delivering service to the infected people. Whatever may be the case it is recommended that people who are infected might wear the surgical mask to prevent the spread of the virus when they are coughing or sneezing, and also sick people, but not contracted with the virus visiting hospital for medical check-up should wear the mask too [8].

DEFINITION OF TERMS

Epidemic: This is the unusual occurrence of disease outbreak in a community or region in a higher rate than expected at a given period of time.

Pandemic: It is the occurrence of disease outbreak in an epidemic manner over wide geographical area, region or continent or world over e.g. COVID-19.

Sporadic: It is the proliferation of disease in a population in a form or scattered manner.

Endemic: Outbreak of infectious diseases, restricted or peculiar to a locality or region.

Prevalence: It is the percent of the total population that has the diseases at a given time.

Incidence: The rate or frequency at which disease or specific health conditions occur in a given time or period.

Mortality: It refers to someone being dead. Is the number of deaths from and infectious diseases relative to the total number that contract the disease?

Morbidity: It refers to someone being unhealthy. Is the incidence of infectious diseases, both fatal and non-fatal, in a population?

Point of entry or exist: It means a passage for international entry or exit of travellers, baggage, cargo, containers, conveyances, goods and postal parcels as well as agencies and areas providing services to them on entry or exit.

Medical check-up for returned and intend traveller: This is a preliminary assessment of a person by an authorized health worker, to determine the person's health status and potential public health risk to others, and may include the scrutiny of health documents, and a physical examination when justified by the circumstances of the individual case; this can be done at both entry and exist point [14,15].

CONCLUSION

War against infectious diseases is a continual process. And it is just the beginning. Finding a limited means of controlling, preventing and managing it does not mean or ensure our victory

over, rather getting to know more about it teratogenesis. It is understandable that you may feel anxious about the outbreak. Get the facts from reliable sources to help you accurately determine your risks so that you can take reasonable precautions. Seek guidance from appropriate health agency like your local or national public health authority, local health Department/State health Department, world health organization, Federal Ministry of Health and National Centre for Disease Control and Prevention, for accurate information on COVID-19 and whether it is circulating where you live.

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