



## Viruses and the Cultural Issue: Dissemination of Science in Disaster Prevention

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In recent decades, we have faced not only the appearance of previously unknown viruses, such as the Human Immunodeficiency Virus (HIV), as well as the reappearance of many diseases that we have been imagined to be under control. Such as Dengue, Measles and more recently the Coronavirus, whose viral family has been known since the mid-1960s, causing respiratory infections in humans and animals.

In Wuhan, China, it has already infected thousands of people and affected several countries. Also called 2019-nCoV, it causes an acute respiratory infection, with symptoms of fever, cough and shortness of breath.

According to the CDC (Centers for Disease Control and Prevention), their symptoms are similar to other respiratory diseases caused by: Influenza, Legionella, *S. pneumoniae*, Adenovirus and RSV (Respiratory Syncytial Virus).

In general, Coronavirus infections cause mild to moderate respiratory illnesses, similar to a cold.

However, some strains can cause serious diseases such as the Severe Acute Respiratory Syndrome (SARS) and the Middle East Respiratory Syndrome (MERS) causing an important impact in terms of Public Health.

Prevention is conducted by basic care to reduce the general risk of contracting the virus, such as: frequent hand washing, avoiding close contact with people suffering from acute respiratory infec-

tions, disposable tissue for nasal hygiene, not sharing personal objects, avoiding close contact with wild or sick animals.

There is no specific treatment for human coronavirus infections. Recommendations for suspicious cases are rest, drink plenty of water, symptomatic drugs, humidifier the room or hot bath to relieve cough.

It is essential to seek immediate medical help as soon as the first symptoms appear.

In Brazil, we do not have a Rapid Test (TLR - Remote Laboratory Test) for diagnosis of coronavirus disease yet, so clinical diagnosis is still very important in this initial phase, especially with children or immunosuppressed patients.

The detection of the viral genome using real-time RT-PCR and partial or total sequencing of the viral genome are the techniques recommended by the Brazilian government's Ministry of Health [1].

There are many factors involved: new viral samples due to genetic modifications, transposition by the virus itself, of the barrier between species and even issues that go beyond the pathogen. In this case, we want to draw attention not only to the discussions of epidemiological surveillance and public health policies, but also to medical science, which insists on focusing on the disease rather than on health.

We have looked at physical factors: demographic pressure [2-5], patterns of social behavior (Lerner MJ. 1970), intense traffic

of people from one point to another on the planet - transporting vectors and infected people. We know that changes in the ecosystem certainly reflect the origin of all this, without forgetting the changes in health systems in the various countries, which, together with economic issues, result in the reduction of resources and infrastructure.

However, what is it that we have not seen? What is escaping that despite all the technology, this digital world and the advancement of Science, it still makes us lose the war or at least scares us when it comes to viral spread. Why does this often happen again, and again?

Should not that be our search? If the virus does mutate, why does not our way of thinking?

The panorama of infections, such as HIV, Dengue, Zika, Chikungunya and others, leads the clinical laboratory to expand its analytical testing strategies in order to improve quality and ensure safe and quickly results. In this way, a flow chart is needed to cover the most diverse situations, in addition to an immersion in the culture, to discover how, when and the best way to apply our knowledge.

The big issue here is information. At least it should be. We cannot allow science to circulate only within universities or in the most easily accessible places, as this is not the only path of the virus. On the contrary. It arrives exactly where we cannot even imagine.

When I mentioned above, the points on which we should focus, I am referring to information and processes that are so basic for the conduct of major epidemics, such as the one we are now beginning to live. For example, when I am in a certain place, talking about pre-analytical conditions (use of personal protective equipment - PPE or biosafety) I wonder:

1. Is there an understanding of what I have tried to convey?
2. Are there conditions (physical, economic, human) for the implementation of the processes I am advocating?
3. Do the individuals understand the importance of learning how to really incorporating this on their routine?
4. Besides that, how can I promote replicators, creating a cascade reaction that disseminates this science, however simple and basic it may be?
5. How can we make sure that the knowledge has been implemented?

“We cannot change the human condition, but we can change the conditions in which humans work” (Victor Laje - BMJ 2000). In other words, we must also be concerned with the dissemination and distribution of the information, so it really can reach the most inaccessible places. As we know that in these cases, even small groups unaware, can be the cause of a great dissemination. Mass participation is required.

Given this scenario and our sense of alertness, not only for 2019-N-CoV, but other possible pathogens that are yet to appear, our invitation is for reflection: in addition to everything that is being done, could we not, within our culture, country, tribe or community, take a step further, in the sense of promoting this science?

In other words, incorporate this science into the experience of that culture and let it finally promote maturity, thus generating greater assimilation of knowledge and a chain reaction.

So that Science, hand in hand with reality, can add learning that comes from the inside out, from the Community towards public policies. And not the other way around.

Just as viruses replicate and vectors multiply, we believe in the dissemination of science as a strong ally (if not our most valuable tool) in fighting the enemy.

We already have a lot of knowledge, but unfortunately, fragmented and poorly distributed in the world. In addition, perhaps we lack a fundamental learning that can only be acquired in the essence of the culture of each population group.

Who knows? Maybe our duty is more than just putting out the fire that has been appearing with some frequency. We may need to learn how to organize, plan and inform better, so we can align this powerful battlefield. Starting to deal with the different resistances (or probable alliances) of each population system and consequently mature our strategic vision in favor of a more promising future.

### Disclosure

The authors report no conflicts of interest.

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