

# *Discipline and compliance are the Cuban Covid-19 vaccine, for now*

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By Charles McKelvey

April 15, 2020

On the evening television/radio news program La Mesa Redonda on April 10, Dr. Rolando Pérez Rodríguez, Director of Science and Innovation of BioCubaFarma, and Dr. Gerardo E. Guillén Nieto, Director of Biomedical Research of the Center for Genetic Engineering and Biotechnology of BioCubaFarma, spoke of the determined and dedicated efforts of Cuban scientific researchers to develop a vaccine to defeat the Covid-19 pandemic. Nevertheless, they stressed that the characteristics of the transmission of Covid-19 are such that social isolation and physical distancing constitute the fundamental method in combatting the infirmity; and if these strategies are ended prematurely, and new wave of contagion could break out.

As was stated by Dr. C. Pedro Más Bermejo, Vice-President of the Cuban Society of Hygiene and Epidemiology, at the Mesa Redonda panel of April 9, "When there is an epidemic, the first question that

everyone asks concerns a vaccine. In this case, we can say that, yes, we count on an important vaccine, which is available without cost in every house, and it is the vaccine of compliance with the measures that the government is establishing, which we have not yet fully attained. Stay in your homes, wear face masks, wash your hands regularly, and practice physical distancing. With this vaccine, we will be able to prevail in this situation.”

Dr. C. Raúl Guinovart Díaz, Dean of the Faculty of Mathematics and Computer Science of the University of Havana, presented a mathematical model on the Mesa Redonda panel of April 9 that demonstrated the fundamental importance of social isolation and physical distancing. Guinovart noted that the model was developed by group of persons that emerged spontaneously, some working from home, with the intention of indicating possible scenarios that could help the leadership in making decisions. Mathematical models are often developed in order to clarify possibilities, and Cuba has experience with this, inasmuch as Cuba has suffered many epidemics previously. He observed that “el compañero Fidel, our historic leader, helped us to develop this mathematical method for confronting pandemics; and from this experience, we can say that the procedure helps to clarify endemic situations, and such models are regularly used by our Ministry of Public Health.”

Dr. Guinovart noted that we have to develop a schema that describes the increase in the number of sick persons, and in what amount of time. Unlike dengue, which is transmitted by mosquitos, Covid-19 is transmitted from person to person. Therefore, the schema classifies persons into the categories of healthy, sick, and recovered, and its premise is that that the amount and speed in the increase of sick persons depends on the degree of interaction between the healthy and the sick. If there is no interaction between the healthy and the sick, there would be no growth in the infirmity. Thus, the separation of the healthy and the sick is important; the best medicine is to keep the sick isolated from the healthy. The sick need treatment in order move to the category of the recuperated, but the intensity of the growth of the sick depends on the degree of interaction between the healthy and the sick.

The Ministry of Public Health has developed a number of strategies to separate and isolate the sick. It has developed systematic inquires of neighborhoods and work sectors, conducted by university medical students with the support of mass organizations, looking for individuals who are sick. There are persons who they do not know that they are sick, because they are asymptomatic (without symptoms); and there are others who have symptoms, but they have not declared themselves to the health system. So, the systematic inquiry seeks to identify persons with symptoms, persons who have had direct contact with sick persons, and persons suspected of being sick because of where they have traveled.

The systematic inquiry is one of the most important measures, because it identifies sick persons and separates them from daily life, so that they do not interact with the healthy. The intensity of the disease increases in the measure that there is interaction between the sick and the healthy. Full medical attention is given to the sick, to bring them to recuperation; but the key to success in the battle against Covid-19 is not the treatment of the sick, but the separation of the sick from the healthy.

Guinovart noted that the people in Cuba are accustomed to seeing different projections of possible hurricanes paths, which depend on natural phenomenon that humans cannot influence. But in the case of the Covid-19 epidemic, the trajectory can be influenced by humans. We can reduce the trajectory of the disease by working together in support of the measures announced by the government.

The graph designed by Guinovart’s group projects a peak of newly confirmed cases in two months at a minimum, starting from the date of the first confirmed case, March 11; no country has reached peak in less time. An important question is asymptomatic persons, and their degree of contact with persons that are healthy. This is why the measures stress leaving the home only when necessary.

The graph shows a peak at 55 days if there is a favorable trajectory, with nearly 1000 accumulated cases; a peak at 65 days, if there is a medium trajectory, with 2000 accumulated cases; and at 75 days, if there is a critical trajectory, with 4000 accumulated cases. Thus, the peak will occur from May 6 to May 16,

depending on the trajectory, and the full cycle would be three and one-half months to four and one-half months. These projections are adjusted each day with more observation.

Guinovart stressed that the principal factor in the date of the peak and in the total number of accumulated cases is the degree to which the people comply with the measures.

Dr. José Ángel Portal Miranda, Minister of Public Health, also was present on the Mesa Redonda panel of April 10. He declared that the pandemic has put much responsibility on states and individuals. Never has the world confronted an infectious virus like Covid-19. It is dismantling communities and economies, causing immense human suffering.

The Minister convoked the words earlier that day of President Díaz-Canel, who described the pandemic as a health, economic, and political crisis for many countries and a challenge for the world, and it also is a challenge for Cuba, which Cuba has to confront as the U.S. economic and financial blockade continues. Díaz-Canel insisted that the infirmity can be stopped. He has full confidence in the Cuban capacity to do so, but the plan that has been developed must be implemented in practice. If there is not compliance with the measures adopted, there will not be the expected results. The full commitment of the people is needed to attain containment of the virus. And much depends on the speed with which the measures are implemented in practice; they have to be implemented rapidly and without vacillation.

Portal Miranda added that it is necessary to ensure the implementation of the measures that have been adopted, but the people do not yet have sufficient understanding of the concept of the “perception of risk.” The government does not use this phrase to frighten the people, but to educate them concerning the transmission of the virus by persons without symptoms, so no one knows if they are in the presence of a transmitting person. This means that any trip outside the home is a risk.

The Minister of Health reminded the television and radio audience of the presentation by Dr. Guinovart on the Mesa Redonda of the previous day, in which three possible projections were presented. If we do not comply with the measures adopted, Portal Miranda insisted, we will be on the road to unfavorable results, and unfortunately, we will have a greater number of sick persons, and a greater number of deaths; we will not be able to save lives, which is the opportunity that we have. It is important that everyone participate, Portal Miranda declared, that there be full compliance with these important measures. Although Cuba has the technology and the diagnostic tests necessary to fight the pandemic, it is important for the people to understand that the increase of sick persons depends of the interaction between the sick and the healthy, and the saving of lives only is possible by breaking the chain of interaction between the healthy and the sick, separating the sick and placing them under the care of the system of health.

Portal Miranda reminded the people that, in Cuba, improvised measures have not been adopted. All of the measures are based on the recommendations of specialists, with the active participation and recommendation of scientists in a variety of fields, as we have seen in the Mesa Redonda programs of Thursday, April 9 and Friday, April 10. Cuba has developed a plan based on systematic analysis of the situation in the county. In the formulation of the plan, the Cuban government has utilized science, putting science into service against this infirmity.

The Minister of Health noted that in the struggle against Covid-19, we have learned that the difficulty in controlling the infirmity is due to its transmission by asymptomatic persons. That was not previously known. Through the systematic inquiry, Cuba is now advancing in identifying asymptomatic persons. However, the systematic inquiry is not going to resolve everything. The participation of the people is fundamental. The Minister emphasized the importance of social distancing and of citizen responsibility, of being less egoistic, and of being responsible for the common good and for the health of all.

Even though the Cuban leadership is calling on the people to think of the measures adopted as their protection, that is, their vaccine, Cuban research scientists continue to race against the clock to develop a pharmaceutical product that could defeat the virus with a single shot.

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