

Available online on 15.07.2021 at <http://ujpr.org>**Universal Journal of Pharmaceutical Research***An International Peer Reviewed Journal*

Open access to Pharmaceutical research

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**Volume 6, Issue 3, 2021**

Open Access

REVIEW ARTICLE**COVID-19 IN MEXICO: PREPARING FOR FUTURE PANDEMICS****Benjamín Ruiz Loyola** *Organic Chemistry Department, FACULTAD DE QUÍMICA, UNAM, Mexico.***ABSTRACT**

The COVID-19 pandemic from 2019 onwards leaves us with an imperative lesson: we must be vigilant and ready to act once a new pandemic occurs. We must have scientific teams ready to develop basic and applied research at a rapid pace; trained and qualified medical teams to act immediately, with all personal and institutional security measures at their disposal; governments determined to put aside political differences to achieve the common welfare and a population informed about prevention measures, ready to abide by the indications of experts. This review includes the scientific opinions (and the lack of it) from the pandemic administrators in Mexico, in morning press conferences of the Mexican president, in evening press conferences by the pandemic manager and in written and electronic media, and we talk about how this is expected to be achieved in the short term, to avoid the many mistakes that have been done so far.

Keywords: COVID-19, Government, investigation, pandemic, personal security, population, Mexico.

Article Info: Received 1 May 2020; Revised 15 June; Accepted 29 June, Available online 15 July 2021

**Cite this article-**

Loyola BR. COVID-19 In Mexico: preparing for future pandemics. Universal Journal of Pharmaceutical Research 2021; 6(3):46-49.

DOI: <https://doi.org/10.22270/ujpr.v6i3.605>

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INTRODUCTION

On June 2021 there was a G-7 meeting in England, the leaders¹ declared their commitment to the work collectively expeditiously towards ending the COVID 19 pandemic, and most importantly, they acknowledged that the next pandemic could come anywhere at any moment². One of the most important statements is that global solutions must be found and your commitment to contribute to this effort. The aim to be leaders in building a resilient, integrated and inclusive global health system prepared and equipped to prevent the causes and eventual escalation of diseases and to rapidly detect emerging threats to health³. Consequently, they propose to commit to four stages of a cycle that include prevention, detection, response and recovery from these threats. The renewal seems to be coming, in a short episode, encouraged by the richest countries in the world, to have a more proactive and committed World Health Organization⁴, although, of course, the opinion of other global players such as China and Russia remains to be seen.

In the G-7 they establish four prevention points; two in the detection zone; three in the response segment, highlighting the commitment to invest in innovation for safer and more effective vaccines, therapeutic

treatments and diagnostics during the first 00 days after declaring a public health emergency of international concern; and three final points in the area of recovery, highlighting here the intent to develop and strengthen financial mechanisms in the medium and long term for preparedness, prevention, detection and response to pandemics.

Among the commitments that most filled the headlines of the news media and some social networks, is the announcement that the G-7 will donate, mainly through the UN's COVAX mechanism, one billion doses of vaccines against COVID-19, throughout this year and next, for the benefit of the poorest countries on the planet, although in the opinion of the WHO this amount is far from the eleven billion doses that the world needs⁵. The epidemic, at the end of the G-7 meeting, was rampant in Africa and South America. But it's a start. However, what did not progress was in the demand made by poor countries that the patents of the current vaccines against COVID-19 be at least temporarily released⁶. There was agreement to support the manufacture of vaccines in poor countries and to negotiate constructively within the World Trade Organization on the issue of intellectual property. At this meeting were present representatives of various pharmaceutical industries (more than 15; there were

representatives of Pfizer, Bristol Myers Squibb, Abbott, Bayer, Thermo Fisher Scientific, Novo Nordisk, Sanofi, Fujifilm Diosynth Biotechnologies, Novartis, Gilead, BD, Eli Lilly, Roche, Johnson and Johnson, Astra Zeneca, GlaxoSmithKline, Takeda and the International Federation of Pharmaceutical Manufacturers and Association) and an international association of drug manufacturers⁷. They, together with the G-7 health ministers, made several statements of great importance, at least from the point of view of good intentions.

For example, Sir Patrick Vallance said: "Partnerships between academia, industry, international organizations and governments have been key in responding to this pandemic and scientists and engineers have played a huge role in making safe and effective COVID-19 vaccines available in just 300 days. This has been an incredible achievement.

"However, the first 100 days in a pandemic are crucial to changing the course of a disease. In those three months, diagnostics, therapeutics and vaccines are key weapons. Given the extent of the social, economic and health impacts caused by COVID-19, the 100 Days Mission is rightly ambitious and sets a goal for us to which we can all aspire. Establishing an international commitment to, in the event of the coming pandemic, be ready not in 300 days but in 100, is ambitious but if there is a union we believe it can be achieved⁸.

WHAT TO AVOID FOR THE FUTURE?

For the next pandemic, we must make sure that we are all on the same page as to how to deal with it, because the current one has had everything except international harmony. To mention some issues in this area, we must remember the refusal of at least three heads of state (United States, Mexico and Brazil) that have consistently refused to use the mask and have come to make statements that are very out of place. The US president declaring that the mask does not work and that it is an attempt to undermine individual freedoms. He also said that the pandemic would extinguish itself by summer, among other bad statements. And when he got sick, he left the hospital (without being discharged) just to be seen, to bolster his re election campaign. Of course, he came out without a mask. In a debate, he even misrepresented statements by Dr. Anthony Fauci indicating that "Fauci declared that they were useless and later changed his point of view⁹". In August 2nd 2020, Facebook removed a video posted by the President of the United States, suggesting that children were "almost immune" to COVID-19, the network argued that it removed that video for containing harmful misinformation about COVID. For its part, Twitter suspended Trump's campaign account for posting that same video. We can see that disinformation reached high places in politics.

Brazil's president has always spoken out against the use of a mask, has rejected the seriousness of the pandemic and has said that social distancing "is ridiculous" and when he became ill (he tested positive on July 7, 2020)¹⁰ he continued to deny the seriousness of the problem.

Brazil is, in June 2021, the second country with the most deaths due to coronavirus¹¹ and yet, while Brazil reached the chilling figure of 1910 deaths in one day, its president had the luxury of telling his people:

"Stop whining. How long are you going to keep crying about it?" The president said at an event. "How much longer will you stay at home and close everything? No one can stand it anymore. We regret the deaths, again, but we need a solution"¹².

The response of politicians in Brazil was immediate. The important thing here is to emphasize that a pandemic cannot be faced with this difference in criteria; Brazil's president without scientific support, and US president misrepresenting it. A separate case is that of the president of Mexico. He appointed Undersecretary Hugo López-Gatell to handle everything concerning the pandemic, who in his multiple statements always expressed himself in favor of putting science before any other point of view; however, one thing has been his speech, which is often belied by the facts. Thus, for example and at the beginning of the contingency, on February 11, 2020, Dr. López Gatell declared that the COVID 19 disease, caused by the new coronavirus SARS CoV 2, behaves like a respiratory disease of moderate to low severity It is milder than seasonal influenza, and if it has gained much notoriety it is because it is an emerging disease, "but the proportion of deaths are similar or even lower than influenza. Specialized hospitals are not needed¹³". In a very unscientific way he made these assertions to downplay the problem and, surely, not to alarm the population. Those who have worked in the areas of security know well that in the face of the unknown it is necessary to take extreme precautionary and preventive measures, but the Mexican government did the opposite. Since the beginning of his administration, the Mexican President has given a press conference every day at seven in the morning; on Tuesdays the main topic is public health and he calls them "Pulse of Health". When the health contingency began, evening press conferences were instituted by Dr. López-Gatell (official spokesperson, above the secretary of health) and his team, every day. These conferences just ended on Friday, June 11, 2021. In those conferences, both in the morning and in the afternoon, there have been countless blunders that lead the population to stop believing in the official information. We will mention some examples of this.

On March 16, 2020, there was an exchange of questions and answers between a journalist (Dalila Escobar), the president, and Dr. López-Gatell. The journalist asked if the president had already done a diagnostic test to verify if he was not infected or if he would be willing to do it. López Obrador replied that he was following the health protocol and that he would do what the responsible doctors told him to do. At the insistence of the reporter, the president asked López-Gatell to explain if it was necessary to take the test. The response was epic in its contradictions and its lack of scientific rigor. Here we write their answers verbatim. "This idea of 'we all have to take the test' or, 'even more so, the president has to take the test', part of a vision completely out of place in scientific terms.

What we have repeatedly explained is: this test is not a test for clinical use, a person who has the symptoms, who has the disease, it is useless to know if he is positive or negative. For what reason? Because this disease, like a huge number of respiratory infections caused by viruses, heal themselves, the body's defense system, called the immune system, generates antibodies that are substances, molecules, proteins that fight the virus and kill it alone, and that is why the vast numbers of the vast majority of people recover spontaneously. Now, even more absurd is to think that we have to pre-emptively take the test, either of us or the president. It has no scientific logic¹⁴. I am going to tell you a very pragmatic thing: it would almost be better for him to suffer from coronavirus, because it is most likely that he individually, like most people, will recover spontaneously and will be immune and then no one would have this anymore concern about him" And confronted with a new question from the reporter (if the president became a carrier and goes to areas of high marginalization, could he infect in some way or not as a carrier?), a gem of scientific accuracy: "The president's strength is moral, it is not a contagious force, in terms of a person, an individual who could infect others. The president has the same probability of contagion that you have or that I have, and you also make tours, tours and are in society. The president is not a contagion force¹⁵". It is easy to conclude that if the Mexican president did not and does not use the mask, it is because no one from his health team has instructed him in that sense or required it, not only for his own protection and to protect those who are close to him, but to set an example for a nation with more than 125 million inhabitants. In this regard, Dr. Michael Ryan, Executive Director of the WHO Health Emergencies Program, pointed out on November 30, 2020, at a press conference, that "regarding the use of masks, leaders must set an example¹⁶". Almost in response to this indication from the WHO, the president declared on December 2, 2020 that the mouth guard is NOT necessary, that there are other measures: "Dr. Hugo López-Gatell and Dr. Alcocer tell me that it is not essential, that there are other measures and I think that the best thing is the proper distance and taking care of ourselves". However, a healthy social distance was not the strong part of the Mexican president either. Globally, our president has been heavily criticized for not maintaining social distancing, for continuing to hug people and kiss children, and for setting a terrible example to the population. Even following the experts' instructions was either a silly lie or evidence of the lack of character of those responsible for attending the pandemic, who never called for disassociation and mouth coverings. The president declared in those days emphatically: "There are those who say that because of the coronavirus we should not hug each other. But you have to hug, nothing happens"¹⁷. On his side, López-Gatell has an incredible collection of nonsense and contradictions, he says one thing and later he says that he did not say it, that they misinterpreted him, that it is the opponents of the government who are against him who misrepresent his sayings. Thus, he declared that it was not

"necessary to build special hospitals or have centers exclusively to treat the coronavirus" (at the beginning of the pandemic worldwide), to end up doing just that; that face masks are not useful to protect us and he finished off saying at some point: "they are good for what they are and they are not good for what they are not good for". In April 2020, he predicted that the maximum peak of the pandemic would oscillate between May 8 and 10, which of course was not fulfilled; at the beginning of April he spoke highly of the sentinel surveillance system and followed them for several weeks, but on May 3 he said: "forget about sentinel surveillance".

Regarding the number of deaths caused by the pandemic, on May 4 it predicted "almost six thousand deaths"; on June 4 he rounded numbers between 28,000 and 30,000 and declared: "a very catastrophic scenario could reach 60,000".

On November 9, he announced that Mexico had reached 100,000 deaths and classified it as "an unusual number", as if he could speak of "usual" numbers of deaths. Days later he made another absurd statement: "Of course, and I want to make it very clear, the people who died, died^{18,19}". As of June 23, 2021, Mexico has accumulated 231,244 deaths, ranking fourth in the world, surpassing countries with a larger population, such as China. A study commissioned by the WHO to the Institute for Global Health Sciences at the University of California, San Francisco, indicates that 190,000 of these deaths could have been prevented if it had acted with institutional strength and effective leadership²⁰. Among the conclusions that we consider most important, this document indicates that "the national authorities did not fulfil their leadership functions during the emergency and did not assume the political responsibility of coordinating a coherent and unified national response; the lack of clear, prudent and correct communication about the real level of risk and about how to act when contracting the disease has contributed to the devastating impact of the pandemic in Mexico. The authorities have not transmitted a correct and coherent message nor have they reinforced public health measures through their own behavior", and recommend, among others, that "Preparedness and response plans for a pandemic should be constantly reviewed and updated. Periodic drills to test readiness should be the norm; responsibility for public health communication must be relocated and public health messages clearly separated from political communication". This study also indicates that the restriction in the application of tests was detrimental to the ability to detect outbreaks, diagnose patients, control transmission and adequately estimate the burden of COVID-19 in the country.

WHAT SHOULD BE DONE FOR A BETTER FUTURE?

As mentioned by the G-7, seek to effectively articulate for the preparation, prevention, detection and response to pandemics, each country in particular and according to its own territorial, population, economic and infrastructure characteristics. Basic research should be

done to increase general knowledge of pathogenic microorganisms, and of zoonotic diseases and applied research to find common bases for each type, species or family of pathogens, in order to develop safe and effective vaccines effectively in 100 days, when a pandemic is declared, because it certainly won't be the last. It is necessary to evaluate and review the lessons that the pandemics of the 21st century leave us: AH1N1, SARS, MERS and SARS-CoV-2, to emphasize the successes and improve those errors that have been generated.

The number of diagnostic tests will have to be increased, for which it will be necessary to have two important characteristics: that they are increasingly cheaper and that they are increasingly rapid. Training and education campaigns, both for front-line health personnel and the rest of the population, in the proper use of personal protective equipment in different environments, should become permanent and non-emergent, and for this it is necessary to have this equipment in sufficient quantity to face any emergency situation and a program of periodic drills in which the result of the training is evaluated. Communication teams should also be ready to develop a timely and truthful disclosure, leaving aside any political or partisan influence, on issues such as the proper use of masks, hand washing, correct social isolation and the use of security systems, sanitization, and above all, many of these concepts must be incorporated into school-based education, either face-to-face or at a distance.

CONCLUSION

This battle is arduous and protracted, so we must prepare ourselves and prepare people to endure it. We must put aside political, racial and gender differences, to focus squarely on what matters: the preservation of the human species, without harming the environment. International cooperation is not just an obligation on the industrialized high-income countries, but we must all participate in what we have to do. It will not be enough with the money and the good intentions of the Group of Seven, but for every country and every citizen in the whole world to play their rules, especially researchers and scientists.

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