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EDITORIAL

Challenges and Visions for Infectious Diseases in Colombia during the COVID-19 Peripandemic Transition 2021-2023

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Retos y Visiones para las Enfermedades Infecciosas en Colombia durante la Transición Peripandémica de la COVID-19 2021-2023

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After the first 20 months of the Coronavirus Disease 2019 (COVID-19) pandemic, caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), many lessons have been learnt in Colombia, Latin America and the world from many points of view[1]. When the COVID-19 arrived to Colombia,[2] and other countries in the region[3], many other infectious diseases concerned affected us, including previous epidemics of chikungunya[4,5], Zika[6,7], and most recently of dengue[8], as well as, the impact of certain vaccine-preventable diseases, such as measles, particularly linked to the forced migration from Venezuela, and the persistent threat of malaria and other vector-borne diseases, HIV and tuberculosis, among many other[9-11]. Even more, in Colombia, as well as in other countries of Latin America, a envisioned challenge in pediatrics is to recover the appropriate vaccination coverage for other diseases different to COVID-19, that have decreased during the pandemic[12]. Such situation may impose a risk for reemergence of certain vaccine-preventable diseases. During the pandemic, a drop in vaccination coverage was observed in the child population, one of the great challenges in the immediate future is to increase this coverage to avoid the appearance of outbreaks of preventable diseases such as measles, rubella, and chicken pox. Fortunately, as consequence of the public health measures took for COVID-19, a decrease on the incidence of many respiratory tract infections has been observed. Other pathogens that are transmitted by contact and drops, such as respiratory syncytial virus, influenza, adenovirus, pneumococcus, causing acute respiratory infection, have decreased. Then, the challenge is to maintain surveillance and establish prevention strategies for these agents, since it is very likely that they would increase in the post-pandemic era and will put pressure on the health system together with COVID-19[13].

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During February 2020[14], countries such as Colombia began the preparedness to the imminent arrival of the SARS-CoV-2/COVID-19, as effectively occurred on March 6, 2020, with the first case in the country. Quickly in the country healthcare providers learn about the SARS-CoV-2 and the COVID-19, from its clinical manifestations to their management[15], as well as, with the rapid development of evidence-based guidelines for this emerging disease[16]. The Colombian Association of Infectious Diseases (ACIN), lead by Dr. Carlos Saavedra, developed the COVID-19 Colombian Evidence-Based Guidelines, with the participation of more than 200 experts supported by more than 60 medical scientific societies in the country, addressing particularly the changes in the knowledge regarding the therapeutical management of COVID-19 patients[17], as well as, more recent issues such as vaccination, the post-COVID-19 syndrome and reinfection, among others[16,18]. Regarding vaccinations, up to September 14, 2021, less than a third of the Colombian population had been fully vaccinated, then many challenges include the enhancement of the national vaccination plan, as well as the acceptability of vaccines by population, but also the potential impact of the variants of concern, such as the Delta, as well as of new variants of interest, as the case of Lambda and the Mu (B.1.621), the last firstly reported in Colombia[19-22]. Indeed, multiple lessons have been learnt from different points of view, including the improvement of healthcare facilities for attending and care of COVID-19 patients, including those at intensive care units[23]. Even more, in this context, the National Institute of Health, has announced that around 89% of the Colombian population, based on their estimations and studies, had suffered or have been exposed to SARS-CoV-2/COVID-19. This would explain, the recent decrease (September 2021) that has been observed in COVID-19 cases in Colombia, joint with the advances of the national vaccination plan. Not least important, associated with vaccination is the correct and close epidemiological and clinical monitoring of the potentially associated adverse effects, including the recent reports of cardiovascular possibly linked consequences (e.g. myocarditis).

Hopefully, in the next months, particularly in the next two following years, 2021-2023, a peripandemic transition may overcome. And with this, still new challenges related and not related to COVID-19, will be in the national agenda for health authorities as well as for scientific societies as the ACIN. Recently, a new guideline, based on scientific evidence for the care of HIV/AIDS infection in adults, pregnant women and adolescents, as well as in children, has been developed and published by the Ministry of Health of Colombia (http://acin.org/index.php/guias), and now its implementation and divulgation is a vital matter for the Ministry as well as for the society at wide national level.

Many other examples, including prevalent diseases, such as toxoplasmosis, enteric parasitic infections, vector-borne and zoonotic diseases, especially those more neglected, required more attention, especially considering the coming Public Health 2022-2031 Ten-Year Plan of the Ministry of Health, with their multiple implications for prevalent infectious diseases in the country[24]. In this context, climate change, the OneHealth approach, among other social aspects, including the Venezuelan migrant, will be persistent for the next years, and should be considered on the actions, research and mitigation and control approaches and initiatives[25-30]. For example, a national study of prevalence of enteric parasite infections, needs to be done again in the country. Other neglected infections, such as toxocariasis, should be also considered[31,32].

Old foes, such as the antimicrobial resistance to antimicrobials[33-35], including not only the one from bacteria but also fungi, compromising the emerging *Candida auris*[36-39], among other emerging pathogens, are still a matter of great concern in the country[40]. Even more, after the misuse highly promoted during the COVID-19, an increase in antimicrobial resistance, is not only expected, but already observed in many countries, including Colombia[41,42]. The fight against antimicrobial resistance, promotion of antimicrobial stewardship programs and education, are key in this context[43-46].

Then, from an institutional point of view, ACIN should continue its work, and its journey in the fight against infectious diseases, from different battle fields, healthcare, research, teaching, management, among others, through their working thematic committees, as well as their regional chapters, which may increase in number over the next years, to cover new topics/diseases, as well as new territories. Finally, and not least important, is to continue promoting more deeply our relationships and collaborations with other related scientific societies in Latin America and abroad, as is the case of other national infectious diseases societies from Venezuela, Ecuador, Panama, Brazil, Argentina, Chile, Peru, among others, as well as with regional and international societies, such as the Pan-American Infectious Diseases Association (API), the Latin American Society of Pediatric Infectious Diseases (SLIPE), the Latin American Society of Travel Medicine (SLAMVI), the Infectious Disease Society of the America (IDSA), the European Society for Clinical Microbiology and Infectious Diseases (ESCMID), the International Society for Antimicrobial Chemotherapy (ISAC), among many other.

At this time when the number of infected and dead people is in full decline, it is important to strengthen epidemiological surveillance and take all measures to move to a stage of elimination of the virus, this includes redoubling the number of daily tests, active search for cases, facilitate the implementation of the auto-test, grant the population relief in this enormous social and humanitarian crisis.

With the pandemic, the enormous deficiencies in health care were revealed, where we can highlight the shortcomings in the primary care of the main diseases that overwhelm our country, some of them immunopreventable, others such as cardiovascular and oncological with late diagnoses that increase morbidity, mortality, and health care costs. For example, the number of new diagnoses of people living with HIV

increased, tuberculosis testing decreased, cancer care was altered, and no surgeries were performed, among others.

With the implementation of molecular biology in many of the remote regions, it is feasible that we can better understand our epidemiology and with the proper management of knowledge to be able to provide solutions to our main problems, all efforts aimed at improving health must be translated into a constant phenomenon to improve our quality of life and also to encourage the development of science, technology and vaccination in Colombia.

The main concern that we must combat is the population's distrust in science, it is key to improve communication, maintain clear and timely messages, using simple language and recognizing our mistakes so that the entire community can trust the advances of science and can adhere to the recommendations. Empathy is mandatory at all times.

There are many issues or areas in which the country requires development, some more important or achievable than others. The pandemic revealed the profound influence of education, poverty, technology and governance on health. Colombia should refocus policies on science, technology and research, for example producing vaccines, improving the development of molecular biology and sequencing laboratories. Many processes present today are supported by resolutions that must be updated now and once the health emergency ends, it seems that the some changes will disappear overnight when someone says "the pandemic is over," probably the World Health Organization.

Finally, the pandemic taught us to be more supportive, more inclusive and also more humane. There should be no differences between the citizens of the world, globalization, climate change, wars, famine and inequality is a great task that science and society must focus on eliminating promptly. More pandemics will come, although at present we expect a resurgence of forgotten diseases that deserve a humanistic look to control and eradicate them.

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