Post-pandemic epidemiology exists, is necessary and is available to all

Rodrigo M. Torres[a], Javier Casiraghi[b] y Oscar H. Franco[c]

[a] *Director of the journal Oftalmología Clínica y Experimental (OCE), Buenos Aires, Artentina.*

[b] *Director of Ediciones del Consejo Argentino de Oftalmología, Argentina.*

[c] *Julius Center for Health Sciences and Primary Care, University Medical Center Utrecht, Utrecht, The Netherlands/Países Bajos.*

Corresponsal author
Dr. Rodrigo M. Torres
romator7@gmail.com

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The term epidemiology resurfaced with the coronavirus pandemic. As is often the case, we remember the appropriate tool to solve a problem when it is already present and causing harm. Now that the pandemic seems to be entering its last phases, it is necessary to continue to revalue epidemiology in prevention tasks and in practical research activities that are within the reach of most physicians, although many are unaware of it.

Epi comes from the Greek word for "about", demo means "people" and logos stands for "study". In other words, epidemiology is the discipline dedicated to studying the health of the people or what happens to the people. But medicine practiced in private settings also cares for groups of individuals who together are a "population". A physician cares for one patient per practice; in one day he sees several patients in one physical location (a private practice) or perhaps in different physical locations (in a private practice in the afternoon, in a private clinic in the morning, and in a hospital one day a week in another location). In this case, a single physician may be caring for and studying the health of one or more potentially different groups that are also part of families, communities and populations. In turn, one of these populations may be subdivided and grouped according to particular characteristics, as in one of the following

examples: people with diabetes, or people with diabetes who have proliferative retinopathy, or people with diabetes aged 30 to 45 years who have proliferative retinopathy, or people with diabetes who do not have proliferative retinopathy, but who have neurotrophic keratopathy. And so on, we could go on listing different combinations of characteristics in a population in order to study some original aspect of it.

The characteristics of one person can sometimes be relevant to an entire community. Therefore, it is important that as physicians we develop and exercise our ability to observe and also maintain a certain amount of suspicion in the face of the obvious, hesitating even at the classic presentation of a common and frequent disease. But if we were to describe a single case for some peculiarity that we found in it, and we were to do so by means of an appropriate methodological structure, we would be doing a clinical case study, which is the minimal expression of a research study. That is very good.

But if we dare to go a little further, we can develop other types of studies that attempt to provide greater scientific evidence value. We will give other examples where we can find original characteristics to study: Are the patients I see on Wednesdays similar to those I see on Thursdays? Is there a day of the week when I see more retinal detachments?

Are the intraocular pressure recordings from measurements taken between 8 a.m. and 10 a.m. of myopic patients the same as hyperopic patients? Is the age of morning patients similar to that of afternoon patients?

The reality is that any physician can perform —applying methodological tools and concepts of medicine based evidence— an epidemiological study of his or her population and conduct an investigation. There is no need for another pandemic and it is not necessary to wait for situations of severity, emergency or rarity of certain cases to practice "epidemiology".

All that is needed is a change of mentality and a new filter in the lens through which to view our medical practice and the world: the lens of scientific formulation, where every situation or experience can result in a scientific question.

Epidemiological research is conceptually collaborative. What happens if I decide to study how the patients that "I" operate on for cataracts in "my" practice look like and I obtain information that I do not share? If I do not expose these results to evaluation and peer review so that they can be validated and subsequently disseminated, the possibility of, on the one hand, having the opinion of others to take advantage of the different experiences is lost and, on the other hand, I am depriving my peers of knowing what is happening in "my" population. As ophthalmologists we know that contrast is essential to be able to perceive.

The contrast of different epidemiological realities allows us to learn and improve from the incorporation of data collected from the same or another population.

The reality of people in Latin America is very different from that of North America and Europe. In fact, the reality of the people in the Southern Cone countries may be different from Central America, or maybe not, and that is something we will have to discover. It is clear that well-designed studies are needed to provide scientific information from the different regions of the world.

It is not enough to have read the results of a systematic review of a therapeutic procedure that proved effective in the European or Asian communites to automatically homologate its conclusions in South America.The population of each site can make a difference. Everything must be corroborated or refuted. In science, concepts that were valid yesterday will not always be valid today. Nor those that are valid in certain geographic latitudes or particular populations will not be valid for the population in which our practice takes place.

That is why we at OCE wish to encourage the conduct of epidemiological studies that mainly evaluate the realities both in Argentina as well as the rest of Latin America. The scientific-academic reward is not devalued; it is resilient even to political and economic aspects, which will be transient. On the other hand, the creation of scientific knowledge is transformed into a legacy that is continually capitalized and transcends generations.

More physicians are needed, and above all those with a high clinical-surgical care, to become involved and participate in studies based on their own populations, being collaborative, working as a team and sharing roles and activities. Doing research takes time, but above all, it requires enthusiasm. We look forward to your epidemiological papers and we are at your disposal to help you, not only at the publication stage, but also at the basic stage, when designing a study to undertake.

After all, as William Osler, renowned Canadian physician, said: "Medicine is the science of uncertainty and the art of probability"[1].

1. Young P, Finn BC, Bruetman JE, Emery JD, Buzzi A. William Osler: el hombre y sus descripciones [William Osler (1849-1919): the man and his descriptions]. *Rev Med Chil* 2012; 140: 1218-1227.