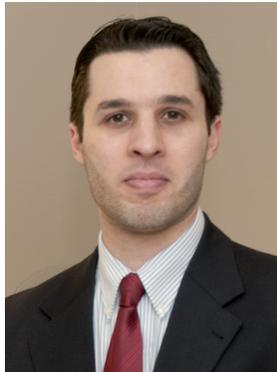


## EDITORIAL

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<sup>1</sup>Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA  
<sup>2</sup>Harvard School of Public Health, Boston, MA, USA

<sup>3</sup>Laboratory of Neuromodulation & Center of Clinical Research Learning, Department of Physical Medicine & Rehabilitation, Spaulding Rehabilitation Hospital & Massachusetts General Hospital, Harvard Medical School, 125 Nashua Street, 725 – Boston, MA 02114, USA

<sup>†</sup>Author for correspondence:  
 Tel.: +1 617 573 2326  
 E-mail: fregni.felipe@mgh.harvard.edu

## Clinical research in Latin America: obstacles and opportunities

Emmanuel Coronel<sup>1</sup>, Donald Halstead<sup>2</sup> & Felipe Fregni<sup>†3</sup>

*“In the middle of difficulty lies opportunity.”*

Albert Einstein

Historically, most clinical research has been concentrated in developed nations. This trend is obvious from the geographical distribution of clinical research publications; most of the publications and the research itself come from North America and western Europe [1,2]. Nevertheless, the presence of clinical research in Latin America and other developing nations has been growing recently, mainly because of cost effectiveness, good patient recruitment and enrollment capability, the emergence of research regulatory agencies, improved ethical oversight of research, growth of the market size in developing countries and thus research capacity. In addition, the outsourcing and globalization of clinical research from contract research organizations is an important phenomenon that has promoted some research in areas that lack the tradition of clinical trials [3].

In fact, research centers in Asia, eastern Europe and Latin America are increasing in number and growing in capacity. Latin America is composed of 20 countries from Argentina in the south to Mexico in the north, with a combined population of more than 590 million people who mainly speak either Spanish or Portuguese. One characteristic that marks Latin America is the great income heterogeneity between and within countries, which also contributes to the heterogeneity of research capacity in this area. Brazil, Mexico, Chile and Argentina are the main players in this scenario, but total research production is still low. No more than 2% of global research is produced in Latin America, and Latin American countries invest no more than 1% of their GDP in health research [4,5].

One important challenge is how to measure research capacity. Several methods have been proposed, including measuring the number of full-time researchers, PhD students, laboratories, patents or publications. Each method has its limitations. In a study we have just conducted, we chose to measure the number of publications from Latin America that have appeared in high impact journals over the last 11 years [CORONEL E, HALSTEAD D, FREGNI F. UNPUBLISHED DATA], as this would be the ultimate goal for high-standard clinical research. We found that only approximately 0.4% of the all the articles we analyzed came from Latin America, with Brazil being the main contributor, and that 2.2% of all the articles involved collaborations between Latin America and other countries. Although changes in clinical research capacity may take decades to translate into changes in publications, these numbers are still very low. The purpose of this article is to identify the main obstacles that contribute to this poor situation of clinical research in Latin America, while at the same time pointing out the potential opportunities for growth in this field.

**Keywords:** clinical research • education • evidence-based medicine  
 • Latin America • training

### Obstacles to clinical research in Latin America

One of the main obstacles against an increase of the research capacity in Latin America is the lack of funding. Compared with developed nations, the resources dedicated to clinical research are still low. Brazil, Chile, Mexico and Argentina are the countries that come closest to the proposals of the Council on Health Research for Development, which in 1990 recommended that a minimum of 2% of national public health budgets be dedicated to health research and that 5% of international aid for the health sector be allocated to research efforts and strengthening research infrastructure [4,6]. Countries such as Peru and Ecuador invest just 0.1% of their country's GDP on health research, falling behind the regional average of 0.54% [4].

In addition, most of the health-research investment in Latin America comes from the private sector, which has certain shortcomings: it does not have a long-term impact in building local research capacity and there is the possibility that the research conducted is not correlated with the region's research priorities [7]. This lack of public investment results in a lack of infrastructure, including laboratories, personnel and supplies, to run clinical studies. Another direct consequence is less investment in training, and as clinical research is becoming more complex and rigorous, extensive training, which may take several years to complete, is essential for new investigators [8,9]. Another issue that may also contribute is the type of research: clinical research in Latin America may not be directed towards globally and also locally prevalent diseases, thus decreasing the enthusiasm of government and society to fund research.

Furthermore, another obstacle that may play a major role is the fact that many Latin American researchers are not fluent in English, which greatly hinders their ability to collaborate with main research centers in the USA and Europe, and poses additional difficulties for publication, presentations and conference participation [10].

### Opportunities for clinical research in Latin America

While there are many obstacles against building clinical research capacity in Latin America, there are also many opportunities and facilitators for clinical research in this region. One of the most important is the reduced cost of running clinical trials in Latin America as compared with the USA and Europe. Reduced operational costs give the opportunity to run larger clinical trials, which greatly increases the impact of the results of clinical trials. In addition, there is usually less competition for patient recruitment in Latin America as compared with saturated major centers in the USA and Europe. Another potential opportunity is the heterogeneous genetic make-up of many countries in Latin America,

with populations from Asia, Europe, Africa as well as Native Americans. It is thus possible for researchers to study predictors of response to different treatments across a wide range of participants. Finally, historical and language similarities can catalyze collaborations across the Latin American countries and facilitate multicenter trials, thus sharing resources and expertise.

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Key institutions like the Pan American Health Organization and Council on Health Research for Development have signed an agreement to support countries in the region in National Health Research Systems development and strengthening. Countries such as Brazil and Ecuador have a dedicated policy for health research and an established structure for undertaking these efforts; they have also specified their research priorities. Since the first Latin American Conference on Research and Innovation for Health, held in Rio de Janeiro, Brazil, in April 2008, other Latin American countries have been making significant changes to their national health-research structures [11]. This may well prove to be of the utmost importance in the development of the region's research capacity. In order to reach these long-term goals, there also needs to be coordinated effort between private and public funding for research and the training of Latin American researchers [6].

It is clear that despite the challenges, Latin America has a great potential to grow in the health research area, which could also have a significant impact on the region's health and economies. Accomplishing this will also require additional studies that measure and follow clinical research capacity, and point to new solutions to address some of the obstacles in this area, to help Latin America become a major player in global clinical research.

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