

## The importance of spreading knowledge relating to Translational Research

Investment in biomedical research has been steadily growing in recent years, although its impact on the development of new treatments and diagnoses has not kept pace with this. Translational Research, which aims to apply the discoveries of lab research and pre-clinical studies to the development of clinical tests and better practice, may therefore help bridge this gap, ensuring that the discoveries of basic research are translated into gains for human health.

Translational research involves a process known as the translation of knowledge, in which the focus of scientific investigation in the field of health acquires a two-way flow of information between basic and clinical research, resulting in real applicability of knowledge and new technologies, thereby improving the clinical application of new treatment concepts and providing direct benefits for the main stakeholders in this process: the patients.

As it is a two-way process, this kind of research is characterized by the translation of the discoveries of bench research into clinical applications and/or the study of clinical results as a way of understanding the molecular mechanisms of disease, by identifying specific biomarkers. This provides added scientific value as a guide for treatment strategies, the monitoring and control of diseases, and also for the design and implementation of policy, preventive strategies and the provision of healthcare.

Although the term is a recent coinage, Translational Research has its roots in age-old investigative practices, since research has often combined experimental lab results with proposals for clinical evaluation, although not at the level of direct application. However, what can be seen at present is, not only the creation of a new term for this kind of research, but also a systematization of its practice, with improved methods and more effective information systems, such as networks.

Translational research began to gain ground in the scientific world after the publication of an editorial in the *Journal of the American Medical Association (JAMA)* in 2002, which discussed the need to apply in practice the advances made through basic research, as a way of improving human health using new developments in the fields of prevention, diagnosis and treatment of diseases.

This started a search on the part of medical researchers for mechanisms that help to translate knowledge from the lab bench to the clinic. Such studies first emerged in the United States, with work groups, support and funding. One important development in the field was the launch, of the periodicals *Translational Research* (formerly *The Journal of Laboratory and Clinical Medicine*) and *The American Journal of Translational Research*, which have since acquired international renown.

There are now various other journals, such as *Science Translational Medicine* and *Translational Psychiatry*. In the field of public health, the *American Journal of Epidemiology* has approached the subject.

At the United States National Institute of Health (NIH), translational research has been a priority since 2003, its main aims being to strengthen clinical research and establish channels of communication between the laboratory and clinical practice, thereby translating basic biomedical investigation into new effective treatments and also bringing clinical observations to the laboratory. The experience of an institution with translational research may emphasize the challenge of mobilizing the team of researchers to conduct it, as many still report that, although there has been a significant increase in interest in basic research (brought about by the revolutions in genetics, bio-informatics and other laboratory techniques) on the part of researchers, this has not been matched by translational research properly speaking. Thus, despite the research infrastructure at their disposal, Institutions have found it difficult to carry out these kind of studies, owing to the lack of involvement of qualified researchers.

It can thus be seen that, although there is sufficient infrastructure to enable this type of work to be significant, its success depends on the engagement of specialists and the establishment of incentives involving basic and clinical science researchers, to complement their other skills.

In Brazil, health institutions and postgraduate programs in various regions have been conducting and broadening the scope of translational research, creating specific centers and projects to support and encourage multidisciplinary studies. In this, they have the support of federal government initiatives, such as the creation of the National Clinical Research Network, by the Ministry of Health, and of the National Institute for Translational Science and Technology in Medicine, through the National Council for the Development of Science and Technology (CNPq), in addition to investment in other institutions that promote research. Meetings have also been held to discuss and exchange knowledge in the field with local and international researchers.

In the field of child and mother health, many clinical matters and associated subjects have already been extensively studied in various situations, and this has been of great importance for health practices. However, there are cases that are still not fully understood, limiting the scope for intervention, and cases that could be addressed differently in future using new scientific discoveries. Translational research thus plays a fundamental role in broadening scientific knowledge based on the specific needs of the target population, as a way of providing better, more effective, practices based on improved levels of scientific evidence and thereby improving quality of life and reducing mortality and morbidity in this area and other fields of medicine.

Finally, given the current scale of Translational Research, it is essential that studies in the area reach a wider readership, through scientific periodicals of varying scope. In fact, dissemination of the results of research that adopts a translational approach should be a priority, as a way of ensuring that new findings can be analyzed and duly applied to individual and community health care.

Journals in the field of collective health thus have an important responsibility, given that wide-ranging interdisciplinary studies based on solid science are indispensable for improving the healthcare of populations as a whole.

It is in the light of this that the our journal, the Brazilian Journal of Mother and Child Health is open to the dissemination of such knowledge.

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