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Editorial

# Scope of Basic Biomedical Research and its Impact on Clinical Investigation

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The purpose of this statement is none other than to highlight the importance of ethical standards and quality required in basic and applied research currently being done so we can subsequently inform health care professionals of new developments that are taking place in this area.

Scientific advances of modern medicine, applicable to all medical specialties and therapeutic areas have a great impact worldwide. The XXI century doctor requires up to date information circulated in daily journals, articles and scientific publications. The update is an obligation within the medical activity; it is a commitment to the profession and to patients. To discern between knowledge and mere information is a rigorous and inexcusable responsibility of any health professional committed to the profession.

Researchers try to solve medical problems and questions from the knowledge gained by scientific research and apply these in clinical practice, biochemistry and development of new treatments. Essentially, it is investigated for the diagnosis, path physiology and treatment of diseases in controlled conditions, omitting the knowledge obtained directly from practice and clinical research.

Current medical research involving human subjects must conform to generally accepted scientific principles generally accepted in their design and implementation, including solid theoretical foundation and an appropriate methodology in addition to relying on a thorough review of the scientific literature, other relevant sources of information and the knowledge gained in the laboratory, animal testing, the fundamental purpose being the improvement of preventive, diagnostic and therapeutic procedures as well as understanding the etiology and pathogenesis of the disease. To obtain the best results with these methods they must be continually questioned and debated by new research to validate its effectiveness, efficiency, accessibility and quality [1].

Basic research in biochemistry, molecular biology and cell biology provides an infinite amount of data and knowledge. Applied research uses that information to understand the path physiology of diseases of patients. The research based on animal models to explain different types of (metabolic, chronic degenerative, infectious) diseases is of great importance for the understanding of the path physiology of these disorders. The animals commonly used are: the mouse, fly, monkey, rabbit amongst others.

In addition, the culture of fibroblasts from both normal cells and those from patients, allows numerous functional studies that are basic to interpret the mechanisms of pathogenesis of disease. These models are essential to verify the effectiveness and eliminate the toxicity of new treatments before its application on humans. At this stage you can finally apply the knowledge gained from basic research to clinical application through clinical trials and therapies for certain groups of patients and thus test its effectiveness.

Despite the enormous advances in science and technology not everything has been solved. The massive generation of data makes it essential to sort, analyze and discriminate this by bio-informatics techniques and rigorous selection of data to arrive at the most appropriate and relevant conclusions to the resolution of the problems.

Applied research improves clinical practice and ultimately supports the recovery of the patient's health, but for the findings of basic biomedical research to help improve health, we need to ensure these reach the clinicians responsible for their application.

Valuation of the impact basic research has on clinical practice is a complex issue. The main difficulty is to measure how the new knowledge discovered in the laboratory and ended up as a medical innovation and clinical practice. It would also be appropriate to define three important aspects: the benefits of research, what the impact of research is and what tools and conditions are required to conduct the investigation.

Similarly, clinical research has to have a major impact on scientific research to achieve a change in the clinical practice and lead to changes in the behavior of professionals. The impact of research is unpredictable because it depends on the nature of the findings, the credibility and

prestige of the research team, the project objective, the consistency of the results with the accepted practice, and socioeconomic and cultural conditions of the environment where the results are applied. Thereupon, the application of new knowledge is not immediate as it depends on factors outside the investigation. Factors such as time, space and context determine the true results.

In short, only designing research projects of high quality and stimulating the rapid transfer of results to clinical application can display the real impact on public health services.

Reiterate the invitation to the scientific community to contribute their ideas and research to ensure that SM Journal of Clinical Medicine is a permanent means of gathering and updating information for all health professionals.

## Reference

1. Declaration of Helsinki. World Medical Association. Ethical Principles for Medical Research Involving Human Subjects. Bulletin of the World Health Organization. 2001; 79: 373-374.