

Translational Medicine and Its Growth

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Translational medicine is growing rapidly in biomedical research and objectives to expedite the discovery of new diagnostic tools and treatments by using a multi-disciplinary, highly collaborative; "bench-to-bedside" approach.

The term translational medicine was introduced firstly in the 1990s but gained the usage world widely in the early 2000s. Translational medicine is also called as translational medical science, evidence-based research, or disease-targeted research, preclinical research, area of research that aims to improve the human health and longevity by formative the relevance to novel discoveries in the biological sciences.

Inside the public health, translational medicine is mainly focused on ensuring the proven strategies for diseases, treatment and prevention are implemented in the community. The prevalent description of translational medicine was first introduced by the Institute of Medicine's Clinical Research Roundtable

(i.e., distinct areas in need of improvement): the first

translational block (T1) prevents basic research findings the second translational block (T2) prevents proven interventions.

The National Institutes of Health (NIH) has made a major push to fund translational medicine, within the biomedical research, a focus on cross-functional collaborations (e.g., between researchers and clinicians); leveraging new technology and data analysis tools; and increasing the speed at which novel treatments reach patients. In December 2011, The National Center for Advancing Translational Science (NCATS) was established within the NIH to "transform the translational science process so that new treatments and cures for disease can be delivered to patients faster." Translational medicine pursues to coordinate the use of novelty in clinical practice and to incorporate clinical observations and questions into the laboratory scientific hypotheses.

Therefore, it is a bidirectional concept, encircling so-called bench-to-bedside factors, that aim to increase the efficacy by which novel therapeutic strategies developed through basic research are tested clinically, and bedside-to-bench factors, which also provides the feedback about applications of novel treatments and their improvement. Translational medicine facilitates the characterization of disease processes and the generation of novel hypotheses based on the direct human observation.

In industry, translational medicine is used as reference to the process that aimed at expediting the development and commercialization of well-known therapies. The translational medicine clinical benefits are realized on a timeline measured in the decades, whereas applied research seeks shorter-term results without pre-tense of generating radical breakthroughs.

Translational medicine enhances the efficacy of biomedical discovery and its application, rather than attempting to transform the existing processes within

the disciplines, which has come to serve as a unifying concept in the complex, specialized, and fragmented increasingly in the field of biomedical research.