Translational Research Informatics (TRI) is the sub-domain of biomedical informatics concerned with the application of informatics theory and methods to translational research. Sub-domains of TRI include translational bioinformatics and clinical research informatics.  

Clinical Research Informatics (CRI) is the sub-domain of translational research informatics concerned with the application of informatics theory and methods to design, conduct and improve clinical research* and disseminate the knowledge gained. CRI overlaps with, but is distinct from other sub-domains of biomedical informatics such as bioinformatics, clinical informatics, and public health informatics.

NIH Definitions for Clinical and Translational Research

Clinical research comprises studies and trials in human subjects that fall into the three sub-categories: (1) Patient-oriented research. Research conducted with human subjects (or on material of human origin such as tissues, specimens and cognitive phenomena) for which an investigator (or colleague) directly interacts with human subjects. Patient-oriented research includes: (a) mechanisms of human disease, (b) therapeutic interventions, (c) clinical trials, or (d) development of new technologies. (2) Epidemiologic and behavioral studies. (3) Outcomes research and health services research.

Translational research includes two areas of translation. One is the process of applying discoveries generated during research in the laboratory, and in preclinical studies, to the development of trials and studies in humans. The second area of translation concerns research aimed at enhancing the adoption of best practices in the community. Cost-effectiveness of prevention and treatment strategies is also an important part of translational science.

The National Institutes of Health (NIH) describe translational research as a project of bringing new knowledge from “bench to bedside.” While the journey from a scientist’s laboratory bench to the patient’s bedside arguably covers the full spectrum of basic science, clinical, outcomes, health services and health policy research, emphasis at NIH is placed on translation from basic science into efficacious and safe clinical interventions.
Definitions from selected NIH Institutes


National Institute of Neurological Disorders and Stroke (NINDS) (http://grants.nih.gov/grants/guide/pa-files/PAR-05-158.html): "Translational research is the process of applying ideas, insights, and discoveries generated through basic scientific inquiry to the treatment or prevention of human disease."

National Institute National Institute on Deafness and Other Communication Diseases (NIDCD) (http://grants.nih.gov/grants/guide/pa-files/PAR-08-017.html): "Translational research is the application of discoveries from basic biomedical and behavioral research toward the diagnosis, treatment or prevention of human disease, with the ultimate goal of improving public health."

Agency for Healthcare Research and Quality (AHRQ) Definitions for Clinical and Translational Research

Clinical Research is the branch of medical science devoted to finding information that improves people's health. It includes research studies that examine the safety and effectiveness of medications, medical devices, diagnostic tests, and treatment regimens intended for human use. Usually, more than one person with the same disease is studied.  

AHRQ describes translational research as a project of bringing clinical research into practice settings. For example, the AHRQ Translating Research into Practice (TRIP)-II program was established to bring about “sustainable improvements in clinical outcomes and patient outcomes” by “translating research findings into diverse applied settings.” Thus, the problem of delivering appropriate health care is much more than the straightforward dissemination of scientific evidence and the production of clinical guidelines are not enough to assure adoption in clinical practice. Translational research in this domain is a problem of developing, testing and implementing strategies for health services beyond the artificial environment of the clinical trial.

1 http://www.amia.org/mbrcenter/cri/feedback.asp
2 http://www.amia.org/mbrcenter/cri/feedback.asp
5 http://www.niehs.nih.gov/about/od/otr/
6 http://effectivehealthcare.ahrq.gov/tools.cfm?tooltype=glossary&TermID=1 Accessed 09_12_09