



Building clinical and translational research teams

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PRACTICAL SCENARIO

A group of pulmonary and critical care investigators in Latin America are interested in developing a master's research program as a means of reducing pulmonary and critical care-related morbidity and mortality in urban settings. They conducted a scoping review of existing training models that they could use and came to agreement on evaluating the competency-based model in clinical and translational research⁽¹⁾. The overall goal of the Latin American program was to gather a cadre of investigators that conduct research proposed by the National Institutes of Health (NIH) in order to accelerate the development or adoption, as well as the dissemination, uptake, and implementation of new medical and health-related interventions to improve respiratory health in Latin America.

WHAT IS CLINICAL AND TRANSLATIONAL RESEARCH?

Translational science is the process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and the public.⁽¹⁾ These interventions can include diagnostics, therapeutics, medical procedures, behavioral changes, access to health care, and health-related laws, in addition to how interventions are effectively disseminated, implemented, and evaluated in the community. This field focuses on understanding the scientific and operational principles underlying each step of the translational process, from developing new treatments to demonstrating their usefulness, as well as to disseminating and implementing the findings. The National Institutes of Health has divided

this process into a spectrum of five different types of research areas: preclinical, clinical, dissemination, implementation, and public health,⁽¹⁾ but the spectrum is not necessarily linear, with each stage building upon and informing the other (Figure 1). Clinical and translational research prioritizes unmet needs that include preventing disease, overcoming disease, and decreasing the burden of disease in local communities. Translational teams produce crosscutting solutions for common and persistent challenges and emphasize creativity and innovation. They also leverage cross-disciplinary science teams, enhance efficiency and speed of research, use boundary-crossing partnerships, and use rigorous and reproducible research approaches.⁽²⁾

THE COMPETENCIES OF CLINICAL AND TRANSLATIONAL RESEARCH

Translational research teams should include professionals with diverse skills, and their core competencies go beyond each individual's specialization. The NIH training competency framework proposes both well-known as well as innovative competencies that the research students would need to develop and master to practice clinical and translational research successfully (Table 1).⁽¹⁾ In our practical scenario, once the group reaches a consensus on the competencies, the next step is to identify faculty with expertise and experience in clinical and translational research, as well as providing the necessary didactic and experiential training opportunities. It is important for the group that the students both "learn" and "conduct" clinical and translational research while in training. The group will evaluate the program during the following two years to report successes and adaptations of this program.

Table 1. Key competencies of a clinical and translational researcher.

Researcher	Competency
Rigorous researcher	Shows strong and state-of-the-art methodological and statistical skills that are rigorous and reproducible
Team player	Leverages and respects research expertise across team members
Boundary crosser	Broadly collaborates across disciplines to advance interventions
Process innovator	Innovates to overcome barriers to advancing intervention development and implementation
Domain expert	Has deep understanding and knowledge within one or more disciplines
Skilled communicator	Communicates well across a broad spectrum of audiences
Systems thinker	Evaluates external forces, interactions, and relationships across all stakeholders involved in developing and implementing successful interventions, including patients, family dynamics, medical professionals, and health care systems

Adapted from the National Institutes of Health.⁽¹⁾

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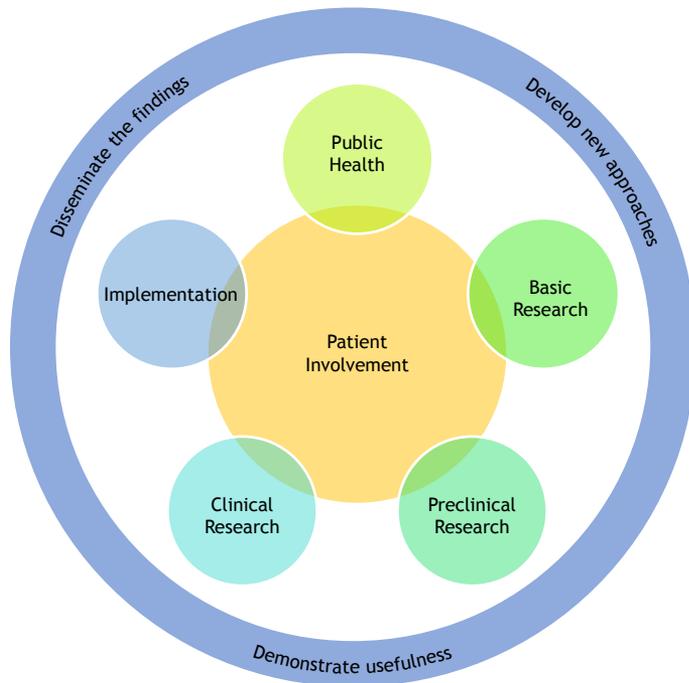


Figure 1. The translational science spectrum. Adapted from the National Institutes of Health.⁽³⁾

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