

## Abstract

### INTERDISCIPLINARY HEALTH SCIENCES AND HEALTH CARE

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#### BACKGROUND

Improving population health requires that health scientists: (1) recognize health services as a dynamic system and develop appropriate conceptual syntheses; and (2) transcend traditional disciplinary silos to create solutions that reflect the complexity of the real world. Accordingly, health scientists have increasingly formed partnerships with biologists, sociologists, behavioral scientists, and economists, as well as with practitioners, to conduct research that is interdisciplinary and problem focused.

#### OVERVIEW

This chapter will define and explore interdisciplinarity, distinguish it from other types of cross-disciplinarity, and discuss challenges and benefits, all in the context of current issues. Its premise is that interdisciplinary health research is driven by three factors: (1) increased recognition and understanding of the complexity of biopsychosocial mechanisms across multiple levels (i.e. from cell to society); (2) the requirement for problem-based research collaboration across disciplines and stakeholders; and (iii) demand for evidence-informed decision making. To better understand these factors, the chapter will explore the concepts of problem-based research, systems thinking, teamwork, and knowledge to action (KTA) processes as they relate to the nature of interdisciplinarity. It will conclude with a discussion of the value added by interdisciplinary research, and strategies for fostering this approach.

#### KEY THEMES

**Increased Complexity.** The increased understanding of the complexity of mechanisms and levels of influence, from genetic and molecular to economic and geopolitical, have pushed health sciences toward non-traditional approaches to problems in health and health care. This is reflected in: (i) emerging theoretical frameworks and methodologies that traverse disciplinary boundaries to form conceptual syntheses; and (ii) the convergence of disciplines, spawning new measurement techniques and the emergence of new interdisciplinary fields.

**Problem-Based Research.** Problem-based research – i.e., research that focuses on tangible outcomes – has led to the concept of knowledge to action, comprising the full spectrum of health knowledge exchange, synthesis, dissemination, adoption, and implementation. Because it is an emergent concept, researchers are: (1) developing models and strategies for conceptualizing, fostering, and strengthening problem-based research and its implementation; (2) increasingly emphasizing the health system's need for improved problem-based research, and for achieving concrete population health outcomes; and (3) recognizing the key factors in successful evidence-based practice, namely collaboration among researchers from diverse disciplines aimed at a broader understanding of determinants and mechanisms, and collaboration between researchers and decision makers to assure the relevance of research and facilitate adoption of research results.

**Knowledge to Action.** The role of interdisciplinarity in addressing complexity and achieving KTA is being recognized by researchers, practitioners, and funding agencies. Recent research has

identified a number of individual and institutional barriers to interdisciplinarity in health research, as well as strategies to overcome them. This chapter will present what is known about the critical enablers of interdisciplinarity (e.g., effective teams and leadership styles) and the process of developing interdisciplinary collaborations, and how the dynamics of collaborations differ across disciplines and stakeholders.

**Teamwork.** The role of teamwork in interdisciplinary health research and its implementation will be described, along with evidence of the impacts and contributions of teamwork, and ways to foster it effectively. An argument for distinguishing interdisciplinary teamwork from other teamwork will be presented, based on both theoretical and empirical evidence.

## **DOES INTERDISCIPLINARITY MAKE A DIFFERENCE IN HEALTH SCIENCES?**

Despite evidence that interdisciplinarity is a key factor in improving population health, questions remain as to the value added of interdisciplinary research over traditional, single-discipline research. To answer these questions, this chapter will end by:

- Defining how value added can be assessed;
- Describing successful interdisciplinary research in terms of productivity and value added;
- Presenting the positive and negative consequences of interdisciplinarity;
- Suggesting how institutions such as universities and health systems can support interdisciplinarity in the health sciences; and
- Summarizing the issues and make recommendations for next steps.