

# Hypothesis: The Research Page

## Making a case for transdisciplinarity

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Canadian family medicine is undergoing a protracted process of reform. It faces the challenges of caring for an ageing society with an increasing burden of chronic disease. Many practitioners sense a loss of control and status in clinical practice<sup>1</sup> and a distancing from the unique theoretical roots underpinning family medicine research.<sup>2</sup> Responding positively to these challenges requires both intellectual leadership and a research base that is appropriate to family medicine and primary care.

Borrowed and adapted knowledge is insufficient to optimize the potential of a comprehensive, integrative, relationship-centered generalist approach to improve the health of individuals, families, and communities. The knowledge base for family practice must be expanded by integrating multiple ways of knowing.<sup>2</sup>

Transdisciplinary research and synthesis offers a way forward, a way to extend current knowledge with family medicine leadership and participatory action.

### What is transdisciplinarity?

Patricia Rosenfield described the concept in 1992<sup>3</sup> when she observed a need to extend research links between medicine and the social sciences in order to inform policy and practice in developing countries facing complex health, social, and economic problems.<sup>3</sup> Martin and Peterson<sup>4</sup> in 1997 described transdisciplinarity in general practice research as various research disciplines working together to develop new solutions for complex primary care reforms. Transdisciplinarity might integrate, for example, ideas and patterns identified through mathematical modeling with more qualitative understanding about the interplay of influences (such as culture, politics, economics, and social organization) to understand how health systems function. The underlying premise is that the whole system must be understood in

its complexity to understand any part in isolation. Transdisciplinarity aims to integrate and translate various types of knowledge.

We are challenged to develop research models that can address complex patterns of interaction among social, cultural, economic, and health influences that shape not only disease etiology and progression but the accompanying illness itself and a community's ability to support suffering and disability. Primary care and family medicine must provide an effective holistic approach to illness in communities. Yet current Western models of service delivery are often fragmented, with narrow approaches to diagnoses formed around discrete body parts and systems.

### Constructing transdisciplinary research

Key components of holistic transdisciplinary research constructed to inform family medicine and primary care reform include:

- developing the intellectual foundation for multiple ways of knowing,
- a system of values that is open, participatory, respectful, and focused on the "real world,"
- new practical integrative research methods and rules for synthesizing and translating knowledge, and
- developing transdisciplinary research roles for family medicine.

**Developing the intellectual foundation.** Research-based knowledge represents the best theoretical fit to the evidence, based upon accepted processes of investigation. Such knowledge ranges from abstract concepts to quantitative predictive modeling.<sup>5</sup> Transdisciplinarity moves beyond typical medical hypothesis-dominated research.<sup>6</sup> Moving deliberately into different, more complex, models recognizes the dynamics, complexity, and non-linearity of

biological and human systems. Such thinking links back to social constructionist or phenomenologic approaches to theory development, as much as to sophisticated mathematical modeling. Complexity medicine,<sup>7</sup> as some have named aspects of such holistic approaches, begins to accept unpredictability and builds on subtle emerging forces within the overall system.


**System of values.** An important rationale for transdisciplinarity is the need to inform policy, practice, and health behaviour. Transdisciplinary research must synthesize and translate findings to real-world rather than academic end points. Achievements in the real world of policy, practice, and society are highly valued. Key elements include active participation with ownership and control by those being researched and respect for different traditions.

**New integrative methods.** The transdisciplinary research question and ensuing methods need to be constructed carefully to create a multifaceted, dynamic understanding of an issue. Researchers must devise explicit processes for creating knowledge and must examine and even challenge underlying assumptions. This can require considerable discourse and development of new concepts, language, and rules for linkages. Synthesis can require a hierarchy of evidence different from the traditional levels of evidence. For example, a trial of an intervention for chronic disease might demonstrate successful outcomes, yet ethnographic research might show that neither community nor clinicians would comply with the intervention in routine conditions.

**Development of transdisciplinary roles.** Transdisciplinary researchers must understand the nature of disciplines and their underpinning assumptions in order to integrate, translate, and implement research transcending, yet respecting, established traditions.

Specific training is required for researchers to collaborate effectively with specialist experts or multidisciplinary teams. Family physician researchers are in an ideal position to be transdisciplinary. Clinicians draw on disease-based and other disciplinary expertise to help patients integrate various specialist theories about their bodies. Transdisciplinary synthesis enables doctors and patients to develop coherent patient-centred care incorporating physical, social, emotional, environmental, legal, financial, and housing needs. Transdisciplinary researchers can similarly synthesize, translate, inform, and nurture primary care development.

### Implications for family medicine research

Primary care reform must address work force and population health needs, including chronic disease care, to maintain an equitable health system. Family physicians can lead research and policy in reshaping primary care to meet these needs. Transdisciplinarity provides an opportune and compelling research model. 

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