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Original article

SafetyNET: An interdisciplinary research program to support a safety culture for spinal manipulation therapy☆

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Abstract

Introduction: A team of interdisciplinary research leaders have taken a novel approach to support a patient safety culture for spinal manipulation therapy (SMT) providers. The aim was to devise a team-based approach to identify modifiable and non-modifiable patient and provider risk factors.
Methods: SafetyNET has four main areas of inquiry, led by five principal investigators. The SafetyNET initiative began with qualitative research regarding patient safety, including identification of potential facilitators and barriers to patient safety research. Simultaneously, a health law team is conducting research to identify potential barriers to patient safety research, including the risk of litigation.
Results: Feedback from both the qualitative and health law team is informing the development and implementation of an active surveillance reporting and learning system. This information in turn, helps inform our basic science team toward investigation of the potential mechanism of action for SMT-related adverse events.
Conclusion: One outcome of the SafetyNET initiative is to provide a model for other disciplines and jurisdictions with respect to improving safety in procedures common to several regulated health disciplines.

This article belongs to the Special Issue: *Ensuring and Improving Patients Safety in Integrative Health Care*.

Keywords: Spinal manipulation therapy; Chiropractic; Physiotherapist; Adverse event; Safety

Introduction

Ensuring patient safety is a vital part of any profession. A commonly used therapy is spinal manipulation therapy (SMT) which may be delivered by several regulated professions in Canada including chiropractors, physiotherapists, osteopaths, physicians, and naturopaths. Despite its frequent use, no safety reporting and learning mechanisms exist presently that would allow the regulated professions who provide SMT to monitor, learn from and reduce related harms. Adverse events from adult SMT most commonly described in the literature are reported as self-limiting such as radiating musculoskeletal pain, nausea, dizziness, or tiredness; the incidence of these adverse events is highly variable [1,2]. Serious adverse events associated with SMT include vertebrobasilar accident (VBA) or stroke and cauda equine lesion (which is a nerve injury that may cause loss of bowel or bladder function, lower body sensation or leg

Abbreviations: AE, adverse events; ASRLS, active surveillance reporting and learning system; CAM, complementary and alternative medicine; SMT, spinal manipulation therapy.

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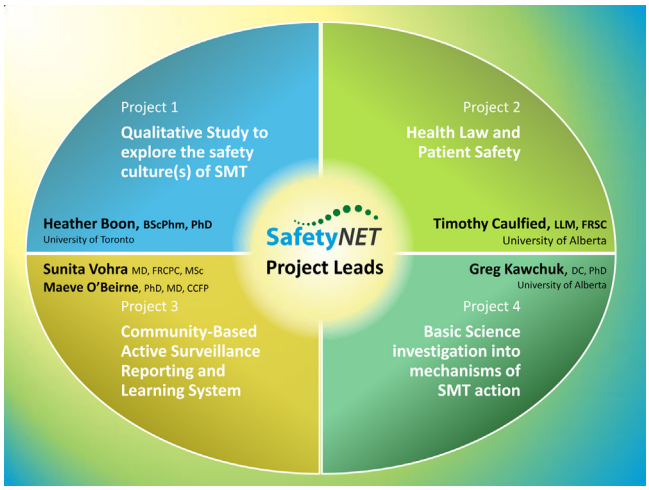

Fig. 1. Overview of the SafetyNET team projects.

paralysis) [2–4]. There are wide ranges in risk estimates for minor and serious adverse events, indicating how little is known and illustrating the need to do more research.

Although all SMT professions recognize the importance of patient safety, it may be difficult for regulatory bodies to develop a reporting and learning system due to various barriers including time and budget constraints. SafetyNET is an interdisciplinary research team developed to study SMT safety. Our goal is to develop, pilot, evaluate, and support a culture of safety for regulated health care practitioners who provide SMT.

Methods

The SafetyNET initiative is led by interdisciplinary researchers with expertise in patient safety, SMT, epidemiology, active surveillance, health law, basic science and qualitative research. Our team has five principal investigators who lead four distinct but complementary projects (see Fig. 1).

The overall approach begins with qualitative research to identify stakeholder goals with regards to patient safety and potential barriers. Simultaneously, we conduct health law research to identify potential barriers to establishing a safety culture with regards to risk of litigation. There is close collaboration between the qualitative and health law components and the clinical research component regarding the initiation of the active surveillance identification and reporting of potential harms by both provider and patient. The active surveillance reporting system is coupled with a learning system to promote patient safety culture. These, in turn, feed into the basic science portion which informs the investigation of potential mechanisms of action of SMT related harms. Collaboration between projects occurs through monthly teleconferences and annual in-person meetings. This team-based approach hopes to identify patient and provider risk factors and, when possible, determine how SMT can be modified to reduce adverse events. SMT safety is relevant to a broad community of stakeholders (see preliminary list in Table 1). Our research team works with interested stakeholders to optimize knowledge translation into policy, guidelines, and curriculum to optimize harms reduction.

Table 1
Preliminary list of knowledge translation stakeholders.

- Alberta Health and Wellness
- Alberta Health Services
- Alberta Primary Care Network leads
- American Chiropractic Association
- American Physical Therapy Association
- Canadian Chiropractic Association
- Canadian Chiropractic Protective Association
- Canadian Interdisciplinary Network for Complementary and Alternative Medicine Research
- Canadian Medical Association
- Canadian Pediatric Society
- Canadian Physiotherapy Association
- Canadian Patient Safety Institute
- Cochrane Adverse Effects methods group
- College of Family Physicians
- Colleges of Physicians and Surgeons
- Health Quality Council of Alberta
- International Chiropractor Association
- Institute for Health Improvement
- Institute of Work and Health
- Public Health Agency of Canada
- Provincial Ministries of Health
- Royal College of Physicians and Surgeons
- Stollery Children's Hospital
- National Chiropractic Mutual Insurance Company
- Workplace Safety and Insurance Board of Ontario

Project #1 (Leader: Heather Boon): Qualitative study to explore the safety culture(s) of spinal manipulation therapy.

> Objectives – (1) To explore stakeholder perspectives on potential opportunities and barriers to identification, reporting and reduction of harm to patients undergoing SMT; (2) Inform development of educational resources to help identify barriers and facilitators; (3) Participate in dissemination of project findings to various stakeholders.

We have used a descriptive qualitative approach that includes interviews with key informants and with front line practitioners. Our overall approach could be described as that of an applied ethnography [5] because we seek to understand the professional culture (the webs and patterns of meaning that guide and make sense of people's actions) [6] of those that practice spinal manipulation, but our questions are focused on a specific part of that culture (*i.e.*, their perceptions of harms and safety issues) and the findings we generate are applied directly to guide the subsequent phases of the research program.

To do this we have been actively engaging those that are being studied [7], by using in-depth interviews to collect data [6]. We are speaking with key informants (including individuals from regulatory bodies, professional associations, and educational institutions), as well as front line practitioners selected to ensure a range of perspectives from men and women in practice for different lengths of time as well as those practicing in rural and urban settings to probe their experiences and perceptions in depth. We are also interviewing patients undergoing spinal manipulation to explore their perceptions of risk, information sources and experiences of risk discussion with practitioners. In collaboration with the Health Law team (Project #2), we are also