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Intelligent Interventions

Organizing Committee

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David Buckeridge, McGill University

Maureen Dobbins, McMaster University

Susan Michie, University College London

Byron Wallace, Northeastern University

Robert West, University College London

Financial Support

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Canadian Institutes of Health Research
Planning Grant in Artificial Intelligence applied to Population and Public Health

Workshop Objectives

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Upon successful completion of the workshop participants will be able:

1. To identify major challenges in organizing and synthesizing scientific evidence about health interventions;
2. To describe state-of-the art computational methods for extracting, organizing, and annotating health evidence; and,
3. To list several intelligent applications of health evidence systematized in highly structured, formal knowledge repositories.

Interventions and Evidence

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- Interventions are used to promote health, prevent and treat disease
  - Individuals
  - Populations
- To be effective, use of interventions must be guided by evidence

Evidence about Interventions

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- Number of intervention trials is growing rapidly
- Format of evidence from these trials in the literature is non-standardized (i.e., non-computable)
  - Conceptual structure or organization of what is reported
  - Content of what is reported

Value of Computable Evidence

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Guiding research – systematically identify topics with limited evidence

Knowledge discovery – predict or discover novel, effective interventions

Decision support – propose or find interventions appropriate for a person or population

The Challenges

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- Moving from current literature to standard representation of intervention evidence
- Representation of evidence
- Applications of evidence

Morning

Afternoon

Morning Agenda

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9:00 – 9:15	Welcome and introduction to the workshop
9:15 – 9:40	Introductions and questions / objectives for the workshop
9:40 – 9:45	Introduction to the morning speakers: Organizing & systematizing evidence about interventions - current state and existing challenges
9:45 – 11:30 (with break after first speaker)	Organizing & systematizing evidence about interventions (20 min talk + 10 min questions): – The Health Evidence Platform, Maureen Dobbins – Challenges and opportunities for intelligent tools to support the conduct of large complex systematic reviews, Jeremy Grimshaw – Machine learning methods for automatically assessing the quality of trials from full-text articles, Byron Wallace
11:30 – 12:00	Panel with morning speakers

Afternoon Agenda

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12:00 – 13:00	Lunch break
13:00 – 13:15	Introduction to the afternoon speakers: Applications of systematized evidence for research, health care, and population health
13:15 – 15:30 (with break after second speaker)	Applications of systematized evidence about interventions (20 min talk + 10 min questions): – Building an ontology of behaviour change interventions, Susan Michie – Building a knowledge system to synthesize and use evidence from behaviour change intervention evaluations, Robert West – Building an ontology of public health interventions and tools for evidence-based public health, David Buckeridge – Using ontology-based Inference for intervention evaluation and policy planning, Arash Shaban-Nejad
15:30 – 16:00	Closing panel: Opportunities and remaining challenges