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SOLIdifying Digital REsearch Approaches in health sciences: An international, transdisciplinary perspective

Gemma Postill, Jana Sedlakova, Stefano Tancredi, Frerik Smit, Sintieh Ekongefeyin, Andrea Baumer, Arnaud Chiolero, Jürgen Bernard, Laura Rosella, Viktor von Wyl



Workshop Overview

In April 2025, we conducted a workshop, bringing together Canadian and Swiss researchers from data science and epidemiology to explore the integration of different data-driven methods in health science. Our goal was to understand the potential impact of such tools on existing research workflows in both disciplines. During the session, we conducted a hands-on end-to-end walkthrough of how each field approaches descriptive, causal, and predictive research questions. We engaged with each question type through guided discussion and collaborative analysis, examining how each discipline frames problems, designs studies, and interprets results. We then evaluated the potential impact of autonomous digital research tools on each field.

Key Insights Arising from the Workshop

Data science and epidemiology offer unique epistemologies and strengths. Epidemiological approaches are grounded in study design, use defined analytic frameworks, and leverage pre-existing domain knowledge. Data science approaches excel in their flexibility to a range of data types and operations in the data preparation stage. Applying data science tools to epidemiological questions has great potential but requires careful consideration of the distinct language and epistemological assumptions, which can manifest differently according to the type of research question and type of data science tool.

A key outcome of the session was a shared glossary and roadmap for approaching health research analyses whilst leveraging the strengths of both disciplines. Stay tuned for further details the next steps, which include publication of our detailed output, continued-cross disciplinary dialogue, co-development of training opportunities, and recommendations for the field!



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