Introduction to Learning Health Systems Minitrack

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Spiraling healthcare costs in the United States and elsewhere, coupled to mediocre outcomes and health status indices, the persistent latency between best practice knowledge and its application in practice, an inefficient public health and clinical research infrastructure, and many other factors demand a more sophisticated use of information technology to support improvements. The ever growing increase digitally stored health information opens the enormous potential to improve healthcare through the integration of disperse data stores.

The Learning Health System (LHS) is envisioned by many to be the fully integrated health data network that serves as a critical national infrastructure to transform healthcare and improve the population health. The underlying premise is that the healthcare system needs to be (re)designed to more rapidly adjust and address critical population and clinical health conditions if it is to produce demonstrable gains in health outcomes while reducing the overall healthcare related economic burdens on individuals, businesses, and government.

This minitrack presents work advancing the state of knowledge and the state of practice in the area of institutional-, national-, and international-scale learning health systems. Research issues of interest include, but are not limited to, the following:

- LHS Design and Infrastructure - Application of system science to realization of an LHS;
- Defining, building, measuring, and tracking confidence and trust in the LHS;
- Infrastructure design and role of standards for data sharing and data-mining; Governance design for rapid learning and change implementation.
- LHS Theories - Models of health systems learning, Adaptive theories of health behavior change, Social-technical models for healthcare improvement.
- LHS Use Cases - Improving patient care, Identifying at-risk patients, Tracking community health improvements, Ad-Hoc improvements, Shortening improvement Cycles, Defining and measuring value from a LHS.
- LHS Stakeholders - Private Sector incentives (and barriers) for rapid learning, Public policy incentives (and barriers) to rapid learning, Patient empowerment as LHS strategy, Privacy and security analyses.