Abstract

Information technology has disrupted multiple industries and is becoming increasingly prevalent in healthcare, with the potential to significantly improve how care is delivered to patients. Telepathology, the practice of pathology using digital images, is a form of telemedicine and one of these radical innovations. While most studies on the topic address technical aspects of hardware and software configurations, or the issue of accurate diagnoses, few empirical studies have addressed the nature and the extent of the transformations associated with the use of telepathology in healthcare settings. Telepathology generates new possibilities in care, such as greater accessibility to specialized medical services. It also creates new needs and constraints, such as training personnel to scan slides and to manipulate large specimens previously handled by pathologists.

The first objective of this three essay thesis is to expand the knowledge base of the transformations associated with the adoption of telepathology. The first essay is a scoping review of the impacts of telepathology and its implementation challenges. The essay highlights the need to contextualize the impacts of telepathology, and to differentiate implementation challenges at the human, organizational and legal levels.

The other two essays focus on a large-scale telepathology project whose aim was to connect 17 sites in Eastern Canada. The second essay is a positivist case study that assesses the nature of and the extent of the impacts of the deployment of telepathology. Data was collected through 43 in-depth interviews with pathologists, surgeons, technologists and administrators involved in the project. The study also quantitatively assesses the use of and the delays associated with the telepathology system. The study’s findings suggest that the objective of ensuring continuous availability of intraoperative consultation services in referring sites was reached. However, there were several human, organizational and legal challenges to extending these benefits across the whole network. This case study also uncovers some of the conditions necessary for success of complex telepathology initiatives.
The third article addresses micro-level effects of telepathology. It focuses on the work practices of telepathology stakeholders, and analyzes how coordination practices evolve following the introduction of this form of telemedicine. Results highlight shifts in three major aspects of coordination practices, namely: the predictability of coordinated tasks shifts from relying on routines to relying more on formal plans and rules; common understanding is based more on standards rather than on familiarity between stakeholders; and stakeholders’ task accountability evolves. The introduction of telepathology is associated with a clarification of boundaries between professions, as accountability becomes less collective and more individual and contractual. The role of proximity in determining accountability remains important, even in telepathology settings.

**Keywords**: telepathology, healthcare informatics, coordination, transformation, impacts, implementation, work practices

**Research methods**: Literature review, case study, qualitative research