

Managing Complexity: Directions for the Future

Authors: Mark Smith and Leslie L. Roos

A number of technological developments have set the scene for the growth of information-rich environments directed toward facilitating research in population health and health services. These include: increased government data collection and interagency cooperation, the growth of record linkage, and techniques (statistical methods and powerful programming languages) for addressing large amounts of data. Such environments are characterized by the desirability of a population registry and complex files whose format changes over time.

The great research possibilities have fostered efforts across a number of Canadian provinces. In Australia, record linkage efforts are underway in several states; those in Western Australia are the furthest developed, with a large number of research papers being produced annually.

Significant efforts are being expended in building informational capital; better knowledge management is needed for both building and preserving this capital over long periods of time. Informational capital can easily be lost over time due to memory loss and staff turnover. The more complex the data, the more documentation is required.

A number of different perspectives are relevant are for such documentation, which must be related to the way researchers from various disciplinary backgrounds approach the data. There is widespread agreement as to the importance of documentation via a standard data dictionary, in which variables and codes are presented for each data set. The growing literature on working knowledge stresses the need for organizing and maintaining knowledge helpful for local users across organizational 'silos'. The open software movement has been built around the idea of 'no secrets'—interested people should be encouraged to read others efforts and contribute their own ideas. Finally, studies of the human-computer interface emphasize the need to study how people search for the information they want.

Our presentation will discuss the Manitoba Center for Health Policy's development of a set of Research Resources to deal with informational capital developed in our province. One example will highlight our efforts to validate the use of administrative data to study chronic disease.

Our Research Resources have had many thousands of 'hits' monthly from investigators outside Manitoba. Although this suggests the utility of our efforts, we have not tried very hard to enlist the cooperation of researchers at other centres to develop their own efforts or integrate their work with our own. A new approach suggested by Robert Hoffmann highlights the possibilities inherent in "A wiki for the life sciences where

authorship matters". Hoffmann discusses the possibilities of collaborative knowledge development to integrate the development of diverse viewpoints and efficiently assemble an extensive body of knowledge while maintaining quality control. Clear authorship maintains a priority of discovery and helps ensure data quality. We would like to engage conference participants in a discussion of the strengths and weaknesses of the approach to knowledge management presented by Hoffmann. Might such a collaborative platform work for the users of the various information-rich environments? If so, what should the next steps be?