

Question Answering from Clinical Information Systems
Jon Patrick
Health Information Technology Research Laboratory
School of Information Technologies
University of Sydney

Clinical Information Systems typically have no search capability over the narrative notes that staff write about their patients. This creates the opportunity to invent useful language technologies that serve their various needs for both daily operational work and for their research.

The notes collected in the course of the care of patient are important to the on-going care of the patient. Each day clinical staff need to ask questions of the patient record so that they can check the care administered by other staff. Resolving such questions has to run the gamut of poor spelling, poor grammar, technical terminology with variable morphology and phrasal structure, neologisms, and homespun abbreviations & mnemonics. Current research has concentrated on two related technologies, firstly producing information extraction for the routine process of daily care by a Smart Notes tool. Second, by developing a clinical data analytics language CliniDAL which is intended to allow expression of all questions that can be answered from the contents of the clinical database, and to compute the answers to those questions. It has the following features:

Question formation using a controlled natural language,

Allowable usage of local sociolect terminology,

Retrieval of all components of the clinical record and search of text components in any combination,

Formation and evaluation of statistical hypotheses using any retrievable content.