THE “HONEST BROKER” METHOD OF INTEGRATING INTERDISCIPLINARY RESEARCH DATA

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Abstract

Multiple clinical informatics systems have been developed within separate departments of the University of Michigan Medical School. We are in the process of creating an “Honest Broker” method of safely and securely linking together data from different clinical systems for a research project studying the co-morbidity of depression and cardiovascular disease. The Michigan Clinical Research Collaboratory (MCRC) is an NIH/NHLBI Roadmap initiative funded to re-engineer the clinical research enterprise.

Introduction

Severe challenges to integrating interdisciplinary research projects include lack of common language and lack of method for integrating data from diverse informatics systems. MCRC is designed to address both issues. This interdisciplinary project is studying co-occurring depression in patients with heart disease in non-university affiliated primary care clinics. A team of primary care physicians, cardiologists, and psychiatrists are collaborating to understand the co-morbidity of the two diseases.

Many other computer systems designed to conduct research trials have been strictly single department focused. For example, Caisis is a single system designed around the Urology department.1 To better understand clinical co-morbidities of disease, more distributed methods are being developed.

Overview of the system

The Honest Broker method will integrate the disparate informatics systems and allow them to communicate in an efficient manner. Examples of such systems include Michigan Depression Outreach and Collaborative Care (M-DOCC), Michigan Cardiovascular Outcomes Research and Reporting Program (M-CORRP), as well as a primary care clinical disease tracking system, Clinifotracker. These will be seamlessly integrated into BioDBx, a research database, to allow interdisciplinary research assessments. Information Technology integration will be accomplished through a health information integration architecture called the “Honest Broker,” which will provide an interface across the disparate systems. This interface will unify these applications’ underlying data sets. The Honest Broker will maintain the direct identifiers from each of the different clinical systems. The Honest Broker will also create a randomly generated research subject ID. Since the Honest Broker maintains the mapping of the clinical systems and the research subject ID, integrated data with only the research ID will be stored in BioDBx, and any other integrated research databases. (See Figure 1)

Conclusion

While each system was designed to solve a single disease problem, together we are able to leverage the existing infrastructure to speed the development and reduce the duplication of effort in conducting clinical research trials. We will be able to demonstrate limited capability of sharing data between Clinifotracker, Honest Broker, and BioDBx.

References