An Institutional Strategy to Support Clinical Research with Centrally Managed Custom Data Repositories

Stephen B. Johnson, PhD1, Thomas R. Campion, Jr., PhD2, Nonie E. Pegoraro, MA3, Stephen B. Housman, D1, B1, and Housman D1

1Weill Cornell Medical College, NY, NY; 2Prometheus Research, LLC, New Haven, CT

Introduction

Healthcare organizations face significant technical and organizational challenges to support clinical research. These barriers have historically led to fragmentation of the research enterprise, which in the extreme form individual researchers have to manage their data separately, in systems that do not support the research productivity. A transparent model for cost sharing ensures financial sustainability.

Methods

Architectures for Research Computing in Health (ARCH) provides a platform for clinical research information systems and data repositories. The platform provides automated data capture, data quality assessment, data transformation, and data access. The platform is designed to provide a centralized research infrastructure for secondary use of clinical data, while collecting specialized data from local research groups.

Results

The infrastructure integrates clinical data from multiple sources, including electronic health records, research administration systems, and external data sources. The platform provides centralized data management and data access. The platform provides centralized data management and data access. The platform provides centralized data management and data access.

Discussion

The ARCH strategy enables an institution to manage clinical data in a centralized manner while providing local research groups with access to specialized data. The strategy provides a transparent model for cost sharing and financial sustainability.

Examples: End-User Applications Combining Data from Multiple Sources

- **RexDB®**: an open-source platform that supports centralized data management and data access. The platform provides centralized data management and data access. The platform provides centralized data management and data access.

- **RexMart DB**: a database management system that supports centralized data management and data access. The platform provides centralized data management and data access. The platform provides centralized data management and data access.

- **RexETL**: an open-source platform that supports centralized data management and data access. The platform provides centralized data management and data access. The platform provides centralized data management and data access.

The Research Exchange Database (RexDB): an open-source platform that supports a transparent, configurable platform for creating data transformation pipelines, intermediate data stores, and custom research data repositories.

RexDB is open-source and model-driven and offers support for metadata, user configuration and web-based queries.