

Innovation Pilot Summary: Clinical and Claims Integration in Utah

The Project: The Utah Health Information Network (UHIN) is a claims clearinghouse and Utah’s state-designated health information exchange (HIE). UHIN initiated this project to develop a more complete picture of patient health by combining clinical and claims data for a measurable, scientific look at financial cost and quality of care. UHIN aims for their new outcomes-based public reporting solution to empower patients and providers with information that support improved care.

The Solution: Mirth channels (“miniature” software programs that run inside Mirth Connect) collect clinical data from the electronic health record (EHR) databases of HIE data sources and X12 messages from claims data suppliers. Inside the Mirth channel, a process normalizes, splits, and transforms the X12 messages into a consumable format and routes the message, along with the HL7 clinical messages, to a Master Patient Index (MPI). Mirth Connect also converts proprietary codes and terminology to LOINC codes and SNOMED CT terms. The MPI is IBM’s Initiate Patient HUB. It uses probabilistic record linking algorithms to identify the patient to whom each message pertains and stamps it with a unique internal identifier (i.e. EID). From this point onward, the data is patient de-identified, but the EID linkage connects all claims and clinical data for a specific patient. After MPI processing, messages return to a Mirth channel that converts them to form that can be included in the database. Next, procedures separate data into fields and put it into series of databases that each contain relevant information, views, queries, and information relevant to a specific measure. The Pentaho Business Intelligence Suite then draws upon the contents of the databases for measure reporting functionality (Figure 1).

Key Solution Takeaways:

- Generated measures related to diabetes, asthma and obesity
- All components are open source, except for the MPI
- Good clinical information on admit, discharge and transfer
- Difficulty sourcing pharmacy data
- Claims data sources must be in ASC X12 format and clinical data must be in HL7 format

Sharing Lessons Learned

UHIN has delivered a concrete set of tools to allow other regional collaboratives to build this solution, including HL7 and X12 connection and conversation Mirth Channels, database design and measure documentation, report templates and query location for file exchange.

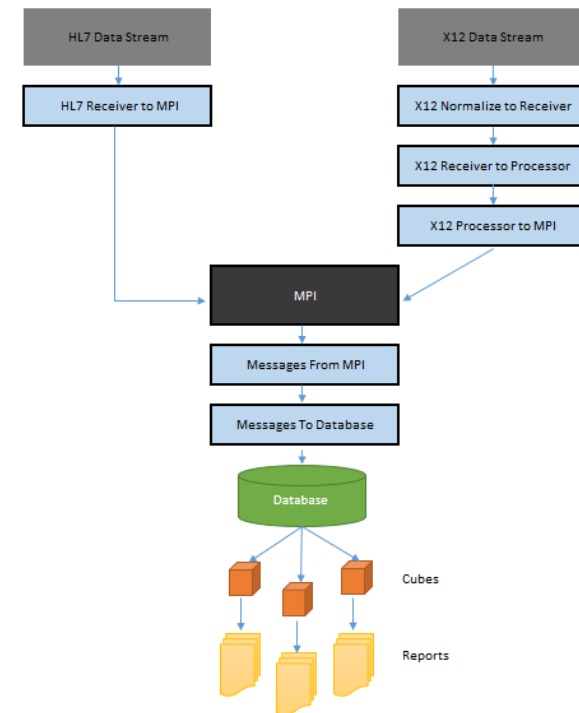


Figure 1. Overview of technical flow of data