



## Analytic Data Solutions, LLC

Analytic Data Solutions, LLC understands the importance of managing complete and accurate data models as well as precise data architecture

illustrating the movement of data from transactional systems to an analytic data environment. Once the data design activities of a development project begins, Analytic Data Solutions may provide assistance in the creating and enhancing of analytic data models and ETL architecture as well as oversight to analytic architecture best practices.

Here are some examples of activities provided:

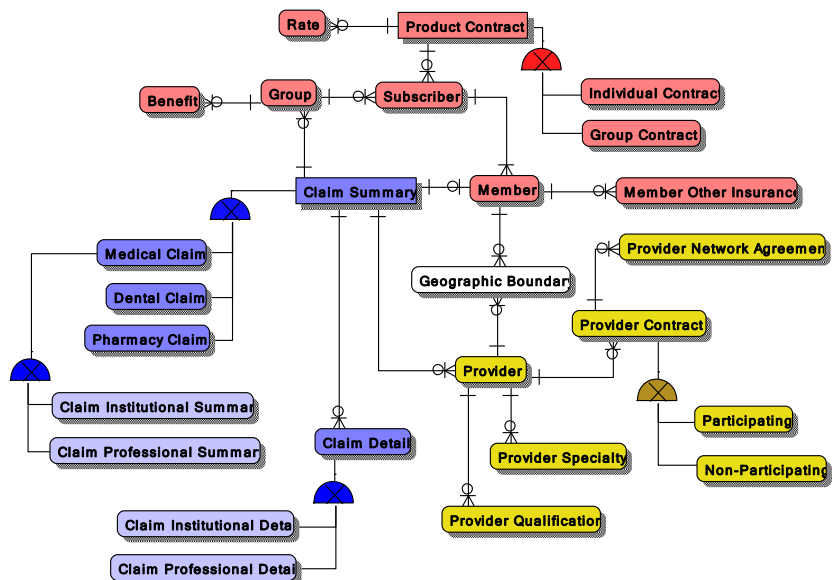
- ✚ ERD Data modeling
- ✚ Enterprise & Conceptual Modeling
- ✚ Review & critique of Data Design ensuring the business requirements are fulfilled
- ✚ Dimensional Modeling
- ✚ Data Mapping & ETL Design

# Data Modeling & Architecture Oversight

The **Business Data Model** provides a logical view of the Enterprise Data acting as a common language between Information Technology (IT) and the business. The data model shows business entities and their relationships as well as the attributes with business descriptions and data types.

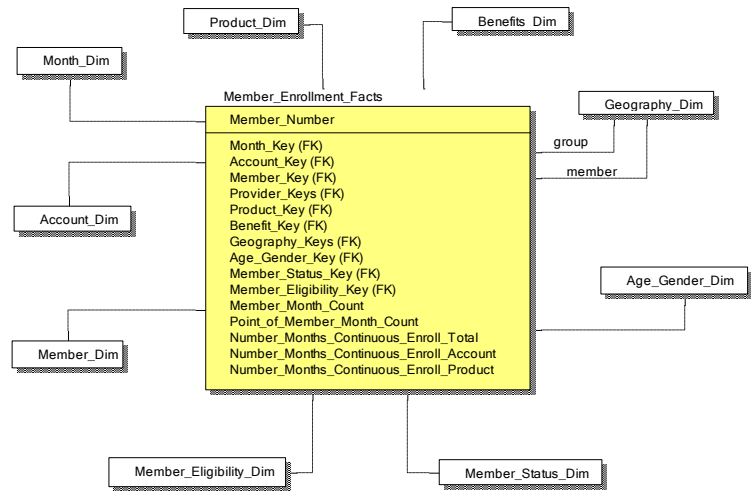
This diagram represents the business data model for healthcare showing business entities and their relationships. A business data model represents the logical view from a data modeling perspective. It contains the business descriptions and relationships illustrating how each of the business concepts interacts together. This model will drive the creation and maintenance of the physical data model.

Also, the business data model becomes the starting point of designing an integrated data store or data warehouse acting as the middle tier of an analytic data architecture schema.

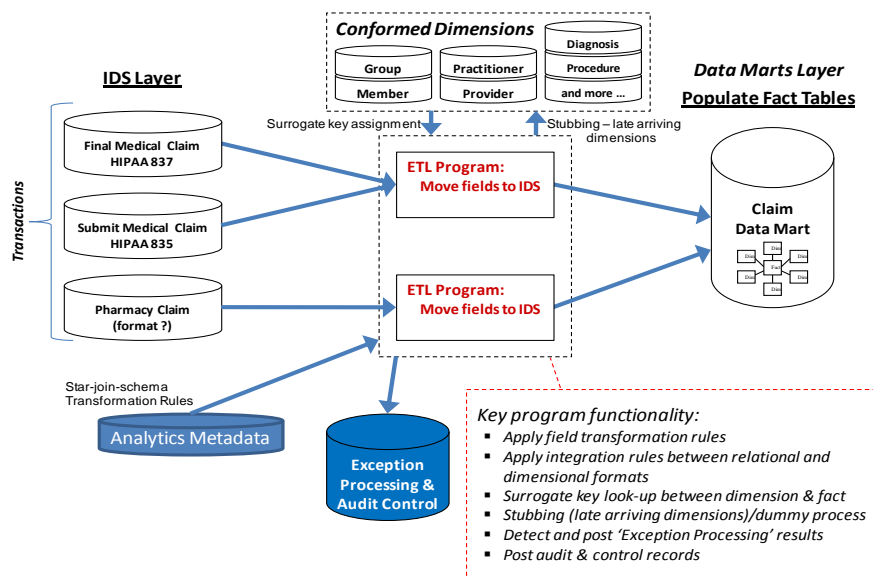


Dimensional models, typically found in the 3<sup>rd</sup> tier of a data architecture schema, represent the appropriate storage/format of analytic data. It is important to apply industry best practices and guiding principles to the design of the data model ensuring optimum performance and high data quality. Data marts are designed to match the corresponding analytic reporting requirements found in the presentation (analytic reporting) layer adhering to the guiding principle of designing a data mart specific to the business needs.

This data mart is an example of Enrollment facts found in the health insurance industry representing member enrollments over a period of time. The dimensions surrounding the fact table are typically part of a DW bus matrix illustrating the power of conformed dimensions. Skills required are dimensional modeling utilizing a data modeling tool such as Erwin as well as performing basic data analysis and mapping.



Another area of expertise is data architecture – the focus here is around the design and readiness of refining the ETL processes that deals with moving (populating) data from source to target databases. The diagram below demonstrates the steps required at the record or table level to extract, transform, and load data.



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This type of diagram is connected to two other design artifacts: 1) process specifications, and 2) a data mapping document. The overall design serves dual purposes:

- Assist in ETL Coding
- Input to the Test Plan

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