

Introducing The Teus Classifier™

The Teus Classifier™ categorizes each claim and claim-line of a health insurance medical claims dataset along several dimensions.

The Teus Classifier™ is particularly useful for organizations and data analysts who are new to the analysis of health insurance claims – and want near-term results. Even a relatively small health insurance claims dataset is big and opaque and even a smart data analyst without deep health insurance claims experience can be lost within the sea of codes. In order to navigate and summarize health insurance claims datasets, codes must be converted to words and grouped into meaningful categories (a process known as classification).

In the past, organizations and data analysts had two poor choices for classifying codes. They could build a custom system for classifying claims, which may take years, even when team members have the knowledge and technical skills to do so. Or, they could license an expensive “black box” claims classification system, with non-transparent classification rules, which may take several months to license and implement. Furthermore, many home-grown and licensed classifications systems are unidimensional, describing provider, service, and site of care using a single list of descriptors.

Dimensions of The Teus Classifier™

The Teus Classifier™ categorizes health insurance claims using three primary dimensions:

- Type of service
- Provider type
- Site of service

Ancillary classification dimensions include:

- Professional specialty
- Admission from ER flag
- Preventive care flag
- Facility or professional claim submission form

These dimensions can be readily sub-totaled by the number of patients in a dataset; the number of services, admissions, or days of care; total allowed or paid amounts; and various rates, such as per-member-per-month (PMPM), per-patient per-year (PPPY), services per 1,000 members, and services per patient.

The Process behind The Teus Classifier™

The classification process starts with a standard data layout and careful mapping of the source data using MySQL. Following data mapping and any updates to the reference and MAP tables in Excel, we conduct quality assurance checks to ensure the integrity of the source data, our mapping of the data, and our reference tables. These quality assurance checks have been incorporated throughout every stage of The Teus Classifier™, and include a series of over 100 specific quality checks in R on our mapped source data. After quality assurance testing is complete, MySQL code brings together the mapped source data and MAP tables to produce the final claims classifications. The final Classifier output table provides immediate data insights and is directly usable for many summary tasks.

The Teus Classifier™ accelerates an organization’s development of a custom, low-cost health insurance medical claims classification system. It can be readily integrated into any organization’s data environment.

The Teus Classifier™ uses a table-driven design, meaning most of the classification rules are contained within reference tables, which provide code descriptions, and “mapping” (MAP) tables, which assign dimensional categories for each code. Reference and MAP tables are maintained within Microsoft Excel. Adding a new classification category or combining categories within a dimension is easily completed through editing the Excel files. Anyone with basic Excel skills can view all codes associated with a classification and make classification changes as needed.

The Teus Classifier™ is transparent, easily modifiable, and compatible with open-source database and analytic tools. The Classifier’s multi-dimensional approach comprehensively describes a claim, including “who” (provider type), “what” (type of service), and “where” (site of service). The classifications can be easily customized to meet an

organization's specific analytic needs. These features make the classifier an excellent tool for team training and allow the system to function with minimal implementation and operational costs.

The Teus Classifier™ is now available to clients via multiple packages that cost-efficiently meet the needs of various organizations and analysts.

I. **Public product – FREE** – requires registration and acceptance of a Creative Commons license

- The Teus Health standard medical claims data model
- Reference tables for calendar year 2019
- MAP tables for calendar year 2019
- Quasi-code and explanatory narrative for applying the MAP tables and classifying Medicare LDS claims
- Medicare 5% LDS summary output

II. **Licensed product – BUY** some or all of the following

- Teus Health enhanced standard medical claims data model, describing the expectations for each field
- Mapping of Medicare LDS data to the Teus Health standard medical data model
- Scripts to load Medicare LDS data, create control totals, and write the data into the standard data model
- Reference tables for calendar years 2016+
- MAP tables for calendar years 2016+, with expanded (more granular) MAP classifications
- R scripts for data quality assurance checks
- R scripts for reference and MAP table quality assurance
- Classification system SQL scripts for applying the MAP tables and classifying Medicare LDS claims
- SQL scripts for producing high-level summary output
- Medicare 5% LDS summary output, per the expanded MAP classifications
- Reference and MAP table updates

III. **Consulting expertise – BUY**

- Teus Health will assist you with adapting The Teus Classifier™ to your business needs, IT environment, data, data model, and data reporting environment

IV. **Production services – BUY**

- On a one-time or routine basis, Teus Health will receive your data, run The Teus Classifier™, and send The Teus Classifier™ output back to you
- The classifications may include customized MAP tables and/or classification rules, depending on your needs

Risk Adjustment Use Case

Medicare risk adjustment uses diagnosis codes from allowed "sources of data" (Medicare Managed Care Manual, Chapter 7 – Risk Adjustment). Diagnosis code from free-standing ambulatory surgery centers, home health agencies, and free-standing dialysis centers are disallowed, as are diagnosis codes associated with lab, radiology, ambulance, and certain other services – even if they are from an allowed provider. The Teus Classifier allows the analyst tasked with calculating risk adjustment scores from claims data to easily differentiate between allowed and disallowed providers and services.

To inquire about offerings or learn more about how The Teus Classifier™ can meet your organization's health claims data needs, please contact Dr. Tia Goss Sawhney at tgsawhney@teushealth.com.