TRUVEN HEALTH ANALYTICS

University of Michigan
Michigan Primary Care Transformation Project
Standard Cost Model

PROJECT AND DATA METHODOLOGY

The Standard Cost Model will utilize both the Truven Health Analytics Commercial MarketScan® data and the CMS Medically Unlikely Edits file to derive Standard Cost estimates for a comprehensive list of Inpatient and Outpatient services and Pharmacy prescriptions. The Standard Cost assignment will approximate the allowed charge for a covered service. Standard Cost for the same procedure may vary by place of service (i.e. Inpatient vs. Outpatient).

Data will be limited to:

- Fee-for-service (i.e., non-capitated) plans
- The East North Central Division, which includes IL, IN, MI, OH and WI
- Non-Medicare eligible individuals.

Based on these criteria, the Standard Cost estimates reflect claims for a convenience sample of large Employer/Commercial data for approximately 6.9 million members in this geography. For the first three years of data in the MiPCT database (2010 – 2012), Commercial MarketScan® 2010 data will be used to set the Standard Cost. In years beyond 2012, more recent Commercial MarketScan® data will be used as it becomes available.

Important Note:

In some cases a Standard Cost value may not be assigned based on the regional geography mentioned above because some services are not present or the number of some services is not statistically sufficient in the MarketScan® regional data. To address this situation and assign a Standard Cost, a 2nd pass will be made through the data where the cost will be based on a U.S. Total value generated from the Commercial MarketScan® data.

The Standard Cost estimates will reflect the mean unit price for Inpatient admissions, Outpatient facility services, professional services and pharmacy prescriptions. In addition to using the Truven Health Analytics “Service Count” field, the individual claim’s Quantity of Services field will also be included in the logic to determine the average cost of services when the MiPCT data has a raw quantity greater than one (1).

In general, unit price is defined as allowed cost per unit of service (medical) or prescription. See below for more details on determining the unit of service, Allowed costs are defined as the amount of submitted charges eligible for payment for all

claims after applying pricing guidelines, but before deducting third party (coordination of benefits), copayment, coinsurance, or deductible amounts.

Inpatient Admission prices are represented as the Allowed Amount per acute hospital admission. Admissions are summarized by Diagnosis-Related Groups (DRGs), a standard methodology used to categorize Inpatient services into relatively homogenous categories for payment and analysis. The DRG – 26 grouper will be used in our analysis.

Inpatient facility and professional claims are assigned an Inpatient cost using the Procedure Code on the claim (ICD-9, CPT-4 and HCPCS codes). If a Procedure Code is not available, then the Standard Cost will be based on Revenue Code.

Outpatient facility claims are assigned an Outpatient cost using the Procedure Code on the claim (ICD-9, CPT-4 and HCPCS codes). If a Procedure Code is not available, then the Standard Cost will be based on Revenue Code.

Important Note:

The Inpatient vs. Outpatient status is defined as to whether the claim was part of an Admission, using an Admissions build methodology developed by Truven Health Analytics. Since the Admission table is rebuilt with every data update, differences in the Admission build will occur from a prior update to the current update. Records will move, over time, from Inpatient to Outpatient and Outpatient to Inpatient.

Example: In the July 2012 update, a specific person with a few inpatient related claims could start an admission, but if none of these claims included a discharge status, these records would not build an admission. These claims will be assigned an “Outpatient” place of service and the Standard Cost will be assigned based on the Outpatient rates.

On the next update file, when the specific person’s remaining claims do include a discharge status, an admission will be created and all of the claims for that admission are assigned an “Inpatient” status. Only the new claims (claims on the later update) will have a Standard Cost assigned base on the Inpatient value. All historical records will retain the Standard Cost they received earlier (i.e. Outpatient).

For this example some of the claims will have an Outpatient standard cost value and some of them will have an Inpatient Standard Cost value. The Inpatient vs. Outpatient Indicator (admission ID) will look like all of them are Inpatient.

Outpatient professional prices are expressed as the Allowed Amount per Outpatient professional service, and are summarized by procedure, which may be coded as HCPCS or CPT.

Pharmacy prices are expressed as the Allowed Amount Per Days Supply, and are segmented by National Drug Codes (NDC).

LOGIC FOR DETERMINING APPROPRIATE CLAIM UNIT COUNTS

Medical Claims:

1) Consolidate all 3 “Medically Unlikely Edits” files provided from CMS into one file and take the maximum Quantity value found (if there are different values per data type)
2) If the Standard Cost is being assigned from Procedure Code, compare Procedure Codes found on the data to the “Medically Unlikely Edits” file. If the Procedure Code is found on the file and the raw Quantity value is greater than the value found on the file, then set the Quantity equal to the amount listed on the file.
3) If the Standard Cost is being assigned from Procedure Code, compare Procedure Codes found on the data to the Standard Quantity Logic – Procedure Code file. If the Procedure Code is found on the file, then set the Quantity equal to 1.
4) If the Standard Cost is being assigned from Procedure Code and the raw Procedure Code value is not found on either map listed above, and the value is > 20 or <= 0, then set the Quantity equal to 1.
5) If the Standard Cost is being assigned from Procedure Code and the raw Procedure Code value is not found on either map listed above, and the value is > 0 and <= 20, then set the Quantity equal to raw Quantity value.
6) If the Standard Cost is being assigned from Revenue Code, compare Revenue Codes found on the data to the Standard Quantity Logic – Revenue Code file. If the Revenue Code is found on the file, then set the Quantity equal to 1.
7) If the Standard Cost is being assigned from Revenue Code and the raw Revenue Code value is not found on the map listed above, and the value is > 20 or <= 0, then set the Quantity equal to 1.
8) If the Standard Cost is being assigned from Revenue Code and the raw Revenue Code value is not found on either map listed above, and the value is > 0 and <= 20, then set the Quantity equal to raw Quantity value.

Pharmacy Claims:

1) If the raw National Drug Code value is <= 0, then set the Quantity Dispensed equal to 1.
2) If the raw National Drug Code value is > 0, then set the Quantity Dispensed equal to raw quantity value.

Admissions:

1) Each admission will have the quantity equal to 1.

DATA VALIDATION OF RESULTS

Truven Health Analytics validates all Commercial MarketScan® studies to ensure that data released complies with standard analytic and contractual guidelines. These guidelines ensure that results are analytically sound by excluding procedure, revenue, DRG or NDC codes with low volume.

Additionally, Truven Health Analytics reviews results at the code level (DRG, revenue, procedure, NDC) to ensure each unit price is not dominated by a particular claims payer or data contributor. This ensures that the confidentiality of an individual vendor's or data contributor's pricing arrangements is preserved. To the extent a particular code's results reflect dominance of more than 70% we reduce the dominance by removing a random sample of records such that the influence is no greater than 70% for that code. This approach produces results for as many codes as possible and maintains appropriate data confidentiality.

Truven Health Analytics will provide a list of excluded codes along with the study results.