Package 'edgedata'

April 24, 2020

Type Package

Title Datasets that Support the EDGE Server DIY Logic

Version 0.1.0

Description Datasets from (Excel download)

< https://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/Downloads/CY2019-DIY-tables. 01.17.20.xlsx>

and (ZIP download)

https://www.cms.gov/CCIIO/Resources/Regulations-and-Guidance/Downloads/HHS-HCC-2019-software.01.17.2020.zip

in a tidy format. These support the Centers for Medicare and Medicaid Services' (CMS) risk adjustment Do-It-Yourself (DIY) process, which allows health insurance issuers to calculate member risk profiles under the Health and Human Services-Hierarchical Condition Categories (HHS-HCC) regression model. This regression model is used to calculate risk adjustment transfers. Risk adjustment is a selection mitigation program implemented under the Patient Protection and Affordable Care Act (ACA or Obamacare) in the USA. Under the ACA, health insurance issuers submit claims data to CMS in order for CMS to calculate a risk score under the HHS-HCC regression model. However, CMS does not inform issuers of their average risk score until after the data submission deadline. These data sets can be used by issuers to calculate their average risk score mid-year. More information about risk adjustment and the HHS-HCC model can be found here:

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Encoding UTF-8

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Author Ethan Brockmann [aut, cre, cph]

Maintainer Ethan Brockmann <ethanbrockmann@gmail.com>

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adult_demo

Adult Demographic Factors - Table 9

Description

A dataset containing the adult model demographic factors for the risk adjustment model. Demographics vary by age (groupings) and sex.

Usage

adult_demo

Format

An object of class tbl_df (inherits from tbl, data.frame) with 18 rows and 9 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat Demographic risk score for each metal level

sex Male/Female demographic category

age_min, age_max Maximum and minimum age for each risk score

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

adult_enroll_dur 3

See Also

Other factors: adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

adult_enroll_dur

Adult Enrollment Duration Factors - Table 9

Description

A dataset containing the adult model enrollment duration factors for the risk adjustment model. Risk score is increased for members with less than 12 months' duration due to risk that is present but not accounted for in diagnoses and prescriptions during the enrollment window.

Usage

```
adult_enroll_dur
```

Format

An object of class tbl_df (inherits from tbl, data.frame) with 11 rows and 7 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat Enrollment duration risk score for each metal level

months Number of enrollment months for each risk score

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

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adult_group

Adult HCC Grouping Factors - Table 9

Description

A dataset containing the adult model HCC grouping factors for the risk adjustment model. Some condition categories have been grouped together, so that any number of HCCs within that group are zeroed out and replaced by the group.

Usage

adult_group

Format

An object of class tbl_df (inherits from tbl, data.frame) with 17 rows and 7 columns

group Group label for risk scores

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat HCC grouping risk score for each metal level

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

Other HCC tables: adult_hcc, adult_interaction, adult_rxc_hcc_inter, cc_hier, child_group, child_hcc, cpt_hcpcs, icd_cc

adult_hcc

Adult HCC Factors - Table 9

Description

A dataset containing the adult model HCC factors for the risk adjustment model. Condition categories (CCs) are triggered by ICD-10 codes (See icd_cc), and a hierarchy is then applied (See cc_hier), creating hierarchical condition categories (HCCs).

Usage

adult_hcc

adult_interaction 5

Format

An object of class tbl_df (inherits from tbl, data.frame) with 128 rows and 7 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat HCC grouping risk score for each metal level

hcc HCC label for risk scores (Includes leading zeroes)

Source

 $Most\,recent\,DIY\,entry\,at:\, \verb|https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index|$

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

Other HCC tables: adult_group, adult_interaction, adult_rxc_hcc_inter, cc_hier, child_group, child_hcc, cpt_hcpcs, icd_cc

adult_interaction

Adult Interaction Factors - Table 9

Description

A dataset containing the adult model interaction factors for the risk adjustment model. Certain HCCs are considered "high risk" HCCs, and when one of these high risk HCCs interacts with certain other HCCs, an additional interaction term is added to the risk score.

Usage

adult_interaction

Format

An object of class tbl_df (inherits from tbl, data.frame) with 2 rows and 7 columns

int_group Interaction group (M/H)

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat HCC grouping risk score for each metal level

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

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See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

Other HCC tables: adult_group, adult_hcc, adult_rxc_hcc_inter, cc_hier, child_group, child_hcc, cpt_hcpcs, icd_cc

adult_rxc

Adult Rx Condition Factors - Table 9

Description

A dataset containing the adult model prescription drug category (RXC) factors for the risk adjustment model. Rx condition categories are triggered by NDC codes (See ndc_rxc) or HCPCS codes (See hcpcs_rxc), and a hierarchy is then applied (See rxc_hier).

Usage

adult_rxc

Format

An object of class tbl_df (inherits from tbl, data.frame) with 10 rows and 7 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat HCC grouping risk score for each metal level

rxc RXC label for risk scores (Includes leading zeroes)

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

Other RXC tables: adult_rxc_hcc_inter, hcpcs_rxc, ndc_rxc, rxc_hier

adult_rxc_hcc_inter 7

adult_rxc_hcc_inter

Adult RXC/HCC Interaction Factors - Table 9

Description

A dataset containing the adult model RXC/HCC interaction factors for the risk adjustment model. Some HCCs have built-in risk for the associated drugs, so if a member has both the diagnosis and the drug, their risk is overstated. Other drugs combined with conditions indicate a greater severity than either the drug or the condition alone, so risk is understated. The RXC/HCC interaction factors make these adjustments.

Usage

```
adult_rxc_hcc_inter
```

Format

An object of class tbl_df (inherits from tbl, data.frame) with 32 rows and 8 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat HCC grouping risk score for each metal level

rxc RXC label for risk scores (Includes leading zeroes)

hcc HCC label for risk scores (Includes leading zeroes)

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc, child_demo, child_group, child_hcc, infant_demo, infant_mat_sev

Other HCC tables: adult_group, adult_hcc, adult_interaction, cc_hier, child_group, child_hcc, cpt_hcpcs, icd_cc

Other RXC tables: adult_rxc, hcpcs_rxc, ndc_rxc, rxc_hier

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cc_hier

Condition Category Hierarchies - Table 4

Description

A dataset used to apply the risk adjustment condition category hierarchies. The HHS-Hcc risk model uses *hierarchical* condition categories. This means that when an individual has e.g. HCC 8 (Metastatic Cancer), they do not also get the risk score for less serious cancer categories.

Usage

cc_hier

Format

An object of class tbl_df (inherits from tbl, data.frame) with 149 rows and 3 columns

cc Condition category code without leading zeroes

desc Condition category description

set_0 Condition category that falls below cc on the hierarchy. No leading zeroes

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other HCC tables: adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, child_group, child_hcc, cpt_hcpcs, icd_cc

child_demo

Child Demographic Factors - Table 9

Description

A dataset containing the child model demographic factors for the risk adjustment model. Demographics vary by age (groupings) and sex.

Usage

child_demo

child_group 9

Format

```
An object of class tbl_df (inherits from tbl, data.frame) with 8 rows and 9 columns used Whether or not the category is used in the RA model plat, gold, silver, bronze, cat Demographic risk score for each metal level sex Male/Female demographic category age_min, age_max Maximum and minimum age for each risk score
```

Source

```
Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index
Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw
```

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_group, child_hcc, infant_demo, infant_mat_sev

child_group

Child HCC Grouping Factors - Table 9

Description

A dataset containing the child model HCC grouping factors for the risk adjustment model. Some condition categories have been grouped together, so that any number of HCCs within that group are zeroed out and replaced by the group.

Usage

```
child_group
```

Format

```
An object of class tbl_df (inherits from tbl, data.frame) with 17 rows and 7 columns group Group label for risk scores used Whether or not the category is used in the RA model plat, gold, silver, bronze, cat HCC grouping risk score for each metal level
```

Source

```
Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index
Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw
```

10 child_hcc

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_hcc, infant_demo, infant_mat_sev

Other HCC tables: adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, cc_hier, child_hcc, cpt_hcpcs, icd_cc

child_hcc

Child HCC Factors - Table 9

Description

A dataset containing the child model HCC factors for the risk adjustment model. Condition categories (CCs) are triggered by ICD-10 codes (See icd_cc), and a hierarchy is then applied (See cc_hier), creating hierarchical condition categories (HCCs).

Usage

child_hcc

Format

An object of class tbl_df (inherits from tbl, data.frame) with 128 rows and 7 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat HCC grouping risk score for each metal level

hcc HCC label for risk scores (Includes leading zeroes)

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, infant_demo, infant_mat_sev

Other HCC tables: adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, cc_hier, child_group, cpt_hcpcs, icd_cc

cpt_hcpcs 11

cpt_hcpcs

RA-eligible CPT and HCPCS - Table 2

Description

A dataset containing the Current Procedural Terminology (CPT) and Health Care Procedure Coding System (HCPCS) codes that determine if a claim is eligible for risk adjustment.

Usage

cpt_hcpcs

Format

An object of class tbl_df (inherits from tbl, data.frame) with 6557 rows and 8 columns

code CPT/HCPCS code

desc Short description of the code

prior Whether or not the code was valid in the prior benefit year

curr Whether or not the code is valid in the current benefit year

footnote Any footnotes included in the CMS DIY file

Details

Risk adjustment requires that claims be face-to-face to count in the HHS-HCC model. The codes in this dataset denote a face-to-face procedure, so if one of these codes is found anywhere on a claim, it counts for risk adjustment.

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other HCC tables: adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, cc_hier, child_group, child_hcc, icd_cc

hcpcs_rxc

hcpcs_rxc

HCPCS to Rx Condition Crosswalk - Table 10b

Description

A dataset containing the HCPCS to Rx condition mappings.

Usage

```
hcpcs_rxc
```

Format

An object of class tbl_df (inherits from tbl, data.frame) with 43 rows and 3 columns

rxc Rx condition number without leading zeroes

desc Rx condition description

ndc HCPCS code that maps to rxc

Details

HCPCS codes create a system for identifying drugs given in a medical setting. But since there are so many drugs, and they very specific, the HHS-HCC model groups similar drugs into broader Rx condition categories.

Source

```
Most\,recent\,DIY\,entry\,at:\, \verb|https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index|
```

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

```
Other crosswalks: icd_cc, ndc_rxc
```

Other RXC tables: adult_rxc_hcc_inter, adult_rxc, ndc_rxc, rxc_hier

icd_cc

icd_cc

ICD to Condition Category Crosswalk - Table 3

Description

A dataset containing the ICD-10 to condition category mappings.

Usage

icd_cc

Format

An object of class tbl_df (inherits from tbl, data.frame) with 8528 rows and 11 columns

icd ICD-10 code

cc Risk adjustment condition category

class It's not yet clear how this is used

eff_date Effective date of ICD code

term_date Term date of ICD code

sex Male/Female specification for ICD code (Risk adjustment currently only supports male and female)

sex_num Numeric sex encoding (1/M and 2/F)

model_num Number corresponding to model: 0 = newborn, 1 = pediatric 2 = maternity, 3 = adult

model Which regression model the age/sex filters apply to - Includes maternity, which is not used in actual score calculations

age_min Minimum age for a given diagnosis code

age_max Maximum age for a given diagnosis code

Details

The ICD-10 system is a vast diagnosis coding system in healthcare. But since there are so many diagnoses, and they very specific, the HHS-HCC model groups similar codes into broader condition categories. Additionally, some diagnoses can only apply to one sex or the other, or to a particular age range.

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

 $Data\ import\ and\ cleaning\ at:\ https://github.com/ArctiCondor/edgedata/tree/master/data-raw$

14 infant_demo

See Also

Other crosswalks: hcpcs_rxc, ndc_rxc

Other HCC tables: adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, cc_hier, child_group, child_hcc, cpt_hcpcs

infant_demo

Infant Demographic Factors - Table 9

Description

A dataset containing the infant model demographic factors for the risk adjustment model. Demographics vary by age and sex.

Usage

infant_demo

Format

An object of class tbl_df (inherits from tbl, data.frame) with 2 rows and 8 columns

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat Demographic risk score for each metal level

age Age for each risk score

sex Male/Female demographic category

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_mat_sev

infant_mat_sev 15

infant_mat_sev

Infant Maturity/Severity Factors - Table 9

Description

A dataset containing the infant model maturity/severity factors for the risk adjustment model. Risk scores are done a little differently in the infant model. Instead of grouping/applying a hierarchy to condition categories, infants have all conditions grouped into 5 severity levels (1-5). They also get a maturity level which corresponds to weeks of gestation at which they were born. There is also a maturity category for age 1.

Usage

```
infant_mat_sev
```

Format

An object of class tbl_df (inherits from tbl, data.frame) with 25 rows and 8 columns

mat Infant maturity level. Can be extremely immature, immature, premature multiples, term, or age 1

sev Infant severity level. 1-5

used Whether or not the category is used in the RA model

plat, gold, silver, bronze, cat Maturity/severity risk score for each metal level

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other factors: adult_demo, adult_enroll_dur, adult_group, adult_hcc, adult_interaction, adult_rxc_hcc_inter, adult_rxc, child_demo, child_group, child_hcc, infant_demo

ndc_rxc

NDC to Rx Condition Crosswalk - Table 10a

Description

A dataset containing the NDC to Rx condition mappings.

Usage

ndc_rxc

16 rxc_hier

Format

An object of class tbl_df (inherits from tbl, data.frame) with 12323 rows and 3 columns

rxc Rx condition number without leading zeroes

desc Rx condition descriptionndc NDC that maps to rxc

Details

The NDC system is a unique drug identifier system. But since there are so many drugs, and they very specific, the HHS-HCC model groups similar drugs into broader Rx condition categories.

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other crosswalks: hcpcs_rxc, icd_cc

Other RXC tables: adult_rxc_hcc_inter, adult_rxc, hcpcs_rxc, rxc_hier

rxc_hier

Rx Condition Hierarchies - Table 11

Description

A dataset used to apply the risk adjustment Rx condition category hierarchies. The HHS risk model uses *hierarchical* condition categories. This means that when an individual has e.g. RXC 6 (Insulin), they do not also get the risk score for RXC 7 (Anti-Diabetic Agents, Except Insulin...).

Usage

rxc_hier

Format

An object of class tbl_df (inherits from tbl, data.frame) with 1 rows and 3 columns

rxc Rx condition code without leading zeroes

desc Rx condition code description

set_0 Rx condition code that falls below rxc on the hierarchy No leading zeroes

rxc_hier 17

Source

Most recent DIY entry at: https://www.cms.gov/cciio/Resources/Regulations-and-Guidance/index

Data import and cleaning at: https://github.com/ArctiCondor/edgedata/tree/master/data-raw

See Also

Other RXC tables: $adult_rxc_hcc_inter$, $adult_rxc$, $hcpcs_rxc$, ndc_rxc

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