**GROUP NAME: OpenML**

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**PROBLEM DESCRIPTION:** ABC Pharma contacted OpenML to carry out an analysis in order to have an understanding on the persistence of taking of a drug they released to market. The aim is to know if a patient, based on his/her information, will follow the prescription of the physician and continue taking the drug for all the treatment time. We have been provided with a dataset with patients’ details.

**GITHUB REPO LINK:** [**https://github.com/jaycee-ds/Drug\_Persistency\_ABC\_Pharma**](https://github.com/jaycee-ds/Drug_Persistency_ABC_Pharma)

**DATA CLEANSING AND TRANSFORMATION**

**Race variable - missing values**

- use the mode as an imputer. Two reasons why:

1. only 2.83% (97 instances out of 3424) are “Other/Unknown”. So, it feels safe

to use the mode to fill in the values for now.

2. The mode accounts for 91.94% of the data. And if we were to group the data

by ethnicity, the mode accounts for 93.45% (3023 instances out of 3235) for

“Not Hispanic” and 61.22% (60 instances out of 98) for “Hispanic”.

- For those reasons, it's safe to assume that it is likely that the “Other/Unknown” values

can be treated as the mode.

**Region variable - missing values**

- use the Region mode for “Not Hispanic” Ethnicity group. Reasons:

- 100% of “Other/Unknown” values in the Region variable, the instances Ethnicity falls under “Not Hispanic”

**Ethnicity variable - missing values**

- use the mode as an imputer. Reason:

- the mode accounts for 94.48% (3235 instances out of 3424) of the values for

Ethnicity.

- There are only 2.66% of missing values so the number is not alarmingly large

to reconsider what we use for the missing values. The mode should be

safe/good enough.

**Ntm\_Speciality variable - missing values**

- We will keep unknowns as a category and see how it relates to other variables.

- Also the categories that accounts for less than 0.01 of the number of observations will be treated as ‘OTHER’.

**NTM - Injectable Experience, Risk Factors, Comorbidity, Concomitancy and Frag\_Frac\_During\_Rx (group of variables) - handling categorical data.**

- “Y” will be replaced with 1 and “N” with 0

**Risk\_Segment\_During\_Rx, Tscore\_Bucket\_During\_Rx, Change\_T\_Score and Change\_Risk\_Segment missing values**

- These variables have more that 40% missing values, consequently they’ll be eliminated.

**Tscore\_Bucket\_Prior\_Ntm - handling categorical data.**

- “>-2.5” will be replaced with 1 and “<=-2.5” with 0

**Risk\_Segment\_Prior\_Ntm - handling categorical data.**

- “VLR\_LR” will be replaced with 1 and “HR\_VHR” with 0