Zeroing in on Effective Member Communication: An Rx Education Study
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ABSTRACT

In 2013, the Centers for Medicare & Medicaid Services (CMS) changed the pharmacy mail-order education process so that Humana Pharmacy may only call a member with cost savings to educate the member on the potential savings and instruct the member to call back. The Rx Education call center asked for analytics work to help prioritize member outreach, improve education success, and decrease the number of members who are unable to be contacted. After a year of contacting members using this additional model insight, the education rate rose significantly and the unable to contact rate fell by more than half; this case study takes you on an analytics journey from the initial problem diagnosis and analytics solution, followed by refinements, as well as test and learn campaigns.

INTRODUCTION

First, we built the model without separating the new members from the existing members. The model was put into production and the model performance was significantly underperforming compared to the predicted values. We immediately stopped the test and learn campaign and examined which members the client was contacting. The client happened to outreach to over 99% new members. The model performance would have been adequate if the client would have outreached to the new members and existing members at the same proportion as the underlying population proportion. Bottom line, new members are significantly harder to have successful outreach compared to existing members. We did not separate those two distinct cohorts when we initially built the models. This paper takes you on a journey to build separate models for different cohorts and puts the cohorts back together to form one uniformed population for the client to build test and learn campaigns from.

ANALYTICAL APPROACH

Our analytic approach is to build a) 50%/50% split between positive and negative examples and b) 60%/40% split between development & validation files. Our analytic preference is to build models on "balanced" cohorts of target and non-target versus the natural sample. Why: when you have small target percentages such as a hypothetical case example: 3% of patients using insulin versus 97% of patients not utilizing insulin; your model could have over representation of the negative examples (non-insulin). This could distort the model performance and the variables that come into the final model as predictors.

INSURE NO DUPLICATE RECORDS AT A MEMBER LEVEL

```
Proc sort nodupkey data=work.ones;
     by mbr_pers_gen_key;
run;
```

PULL A RANDOM SAMPLE OF 10K:

```
proc surveyselect data=work.ones
     method = SRS rep =1 sampsize = 10000 seed = 12345
          out = work.ones_rsam;
run;
```

ADD THE VALID FIELD:

```
data work.model_sample_v;
    set work.model_sample;
            if ranuni(502472011) le 0.6 then valid = 0;
                    else valid = 1;
run;
```

INSURE THE DISTRIBUTION OF VALID IS 60%/40%

```
proc freq data=work.model_sample_v;
    Tables valid/List missing  out = work.valid_t;
run;
```

COMBINATION MODEL CONCEPT

We want to use the "new Member model" and "existing member model" together. We want to have a very efficient process to run test and learn campaigns.
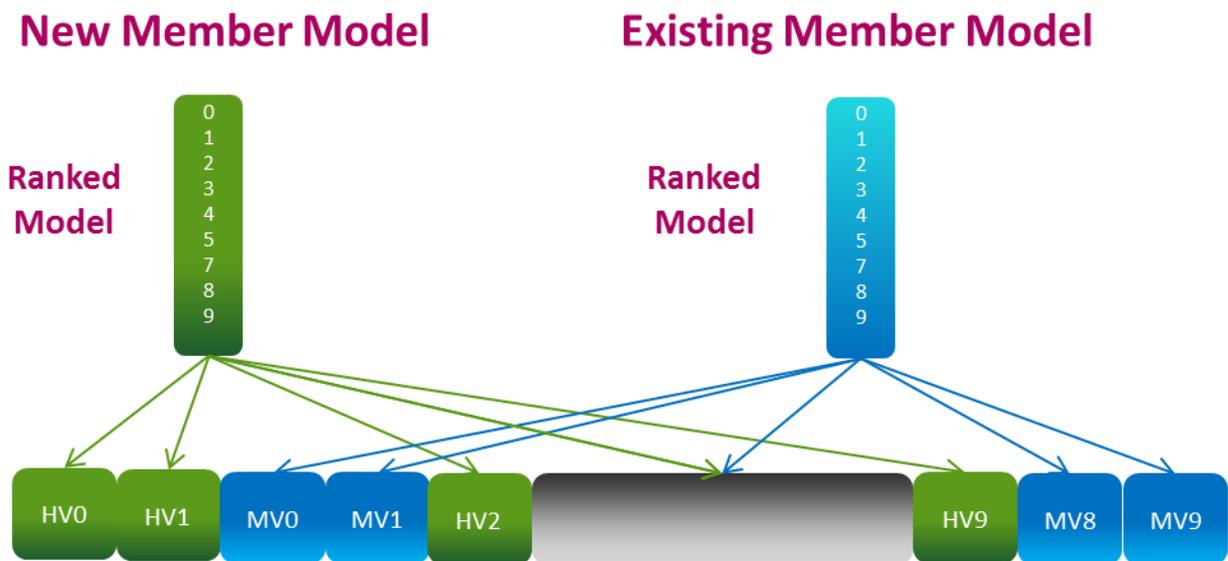

Figure 1. Combination model Methodology

Figure 1. Demonstrates the concept of utilizing multiple models to get a final ranked population independent of model and cohort.

FINAL OUTPUT … HOW?

Our client needs the simplest approach to priority outreach to the best members and at the same time allow for maximum flexibility for sub setting the population (new members, new members with exclusions, existing members within a location, existing members on specific medications in a particular health plan, etc.). The final output will be a member identifier key, global score and a global ranking.

GLOBAL RANKING:

```
data work.universe_gd;
    set work._trd_mail_new_mapd_pdp;
        if   (model = 1 and (ranking =0 or ranking = 1)) or
             (model = 3 and (ranking =0  or ranking =1 )) or
             (model = 4 and (ranking =0)) then do;
                        Global_Decile = 0;
        end;
        if   (model = 1 and (ranking =2)) or
             (model = 2 and (ranking =0  or ranking =1 )) or
             (model = 3 and (ranking =2)) or
             (model = 4 and (ranking =1 or ranking =2 )) then do;
                        Global_Decile = 1;
        end;

             /*more sas code*/

        if   (model = 1 and (ranking =9)) or
             (model = 4 and (ranking =9)) then do;
                        Global_Decile = 9;

        end;
  run;
```

GLOBAL SCORE:

```
data WORK.UNIVERSE_GD_GS;
    set WORK.UNIVERSE_GD;
        if  (model = 3 and (ranking =0 )) then do;
                        Global_Score = 40;
        end;
        if  (model = 1 and (ranking =0 )) then do;
                        Global_Score = 39;
        end;
        if  (model = 3 and (ranking =1 )) then do;
                        Global_Score = 38;

             /*more sas code*/

        if  (model = 1 and (ranking =9 )) then do;
                        Global_Score = 2;
        end;
        if  (model = 4 and (ranking =9 )) then do;
                        Global_Score = 1;
        end;
  run;
```

CONCLUSION

The ability to combine models to form a scored population is valuable in the test and learn campaign setting. This paper demonstrates a method to accomplish this task. The concept of global ranking and global score are easy to code and explain to the non-technical audience.

CONTACT INFORMATION

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