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Executive Summary – No-Show Predictive Model

No-shows impact revenue generation and clinic efficiency. Clinic management provided a data set hoping to learn what are the key factors most influential toward a patient no-showing and can a predictive model be built to identify the appointment status days in advance to allow appropriate staff action.

Construction of a strong predictive model was unable to occur with given resources and time. The best performing model could accurately predict a true no-show 61.09% of the time, with an overall accuracy of 55.63%, in turn being slight better than random guess. However, the team identified key insights influential to no-shows from the available variables that would benefit clinic management when implementing new workflows and policies. Starting at the patient level, younger, those on scholarship (welfare) and smokers were influential to favor no-showing. Age being the strongest factor. Targeting these groups provides optimal return of investment regarding reduction of no-show prevalence. At the appointment level, those with longer wait times and not receiving an SMS reminder influenced no-showing.

The current iteration of the predictive model is not ready for live testing. The team needs additional time to discover other potential predictors for model addition outside the given predictors and to process other modeling approaches. Model iteration must occur until accuracy metrics above 80% are reached, allowing next steps to be taken. In the meanwhile, it is recommended clinics focus on shortening patient wait for appointments and ensuring all appointments get an SMS reminder to address no-shows. Current data shows the average wait for an appointment close to 14 days and only 57% of appointments getting a reminder.