Statistical Analysis Plan

Measures and Data Analysis. Participants will complete a baseline, end of baseline period, and end of study survey via Way to Health with standard measures of drinking and driving behavior, measures of planning ability, a delay discounting task, and demographic variables. Time-stamped and geocoded drive trip data will be obtained from the TrueMotion app. Self-reported drinking behavior will be recorded weekly using the timeline follow back method.

Primary outcome: The primary outcome measure will be the change in proportion of breathalyzer measurements submitted with self-reported drinking episodes across groups.

Secondary outcome measures include: 1) Change in frequency of BACtrack monitoring within each intervention group from baseline; 2) Drinking and driving episodes in which their BAC via self-report or BAC measure is expected to be positive; 3) Changes in accuracy of BAC guess vs actual BAC measure with continued use (Does a participant become more accurate overtime in predicting what their BAC will be prior to measuring). Lack of previous research prevents us from calculating the power to detect the drinking and driving outcomes, which is why this pilot trial is critical for securing future funding.

To measure the primary outcome, we will employ a logistic regression using the participants baseline as a predictor and the intervention vs. control and vs each other as the primary predictors. Although longitudinal models such as generalized estimating equations might be considered in light of the repeated measures among individual participants, logistic regression is preferred in this case because the primary outcome collapses most time points into a single dichotomous measure.

Approach to missing data: As our main outcome in this trial is the proportion of measures conducted overtime, missing data will be scored as not completing a measurement. Participants missing weekly self-report surveys will be reminded to complete a TLFB for any missing weeks regularly. If a participant fails to complete 75% of the self-report surveys under baseline conditions they will not be allowed to continue to the intervention phase. If participants who have moved to the intervention phase fail to complete self-report data during the intervention phase estimates on drinking behavior can be derived from their baseline data.