

Online Supplement for Enhancing Treatment Re-Engagement for Veterans with Serious Mental Illness: Evaluating the Effectiveness of SMI Re-Engage 1

*Note:* This online supplement contains a description of the calculation of propensity scores for multivariable analyses. This online supplement also describes results of all bivariate analyses. Results of multivariable analyses are reported in the main journal article.

### Supplemental Methods

#### *Description of Inverse Propensity Treatment Weight (IPTW) Calculations*

The first survival analysis included a weight representing the propensity to be contacted via SMI Re-Engage. The model used to calculate the propensity weights was a logistic regression in which the dependent variable was contact and independent variables were selected based on a prior evaluation of SMI Re-Engage that identified factors associated with the odds of contact (18). Per recommendations for IPTW, propensity score weights were stabilized (19) and histograms of the stabilized weights were used to examine the distribution of values for those veterans who were contacted as compared to those who were not (20). Extreme observations were trimmed to the highest and lowest values where the distributions overlapped (21-23). Bivariate analyses assessed the balance of the stabilized and trimmed weights between veterans contacted and not contacted based on the independent variables (20).

The second survival analysis included a weight representing the propensity to return to care via SMI Re-Engage. We employed the same processes as described above to calculate the propensity weights. In the logistic regression model used to calculate weights representing the propensity to return to care, covariates described above were independent variables and the dependent variable was returned to care. Trimming was unnecessary because the distributions of weights for veterans who did and did not return to care overlapped.

The third multivariable analysis was a post hoc logistic regression analysis used to evaluate the association between contact and type of return to care visit. This multivariable model included a weight representing the propensity to be contacted via SMI Re-Engage. Weights were calculated using only the subsample of 941 veterans who returned to care via SMI Re-Engage using the same processes described above. In the logistic regression model calculating the propensity weights, the independent variables were the covariates previously described and the dependent measure was contact.

### Supplemental Results

#### *Bivariate Findings*

Bivariate cross tabular analyses indicate that contact was associated with return to care: 42% of veterans who were contacted returned to care whereas 27% veterans whom providers attempted to contact but could not reach returned to care within the 545-day time period (Fisher’s Exact Test  $p < .001$ ; Supplemental Table 1).

Supplemental Table 1. Contact status by return to care status among Veterans whom providers attempted to contact (n = 2945)				
	Contact			
	Yes (n = 886)		No (n = 2059)	
Returned to Care	N	%	n	%
Yes	375	42%	566	27%
No	511	58%	1493	73%

Bivariate cross tabular analyses indicated that 1% veterans who returned to care became deceased whereas 3% veterans who did not return to care became deceased within the 545-day period; a difference that was non-significant (Fisher’s Exact Test  $p > .05$ ; Supplemental Table 2).

Supplemental Table 2. Returned-to-care status by mortality status among Veterans who were contacted (n = 886)

	Returned to Care			
	Yes (n = 375)		No (n = 511)	
Deceased	n	%	n	%
Yes	5	1%	13	3%
No	370	99%	498	97%

*Post hoc Analysis: Contact Status and Type of Return to Care Visit*

A post hoc bivariate analysis (Supplemental Table 3) was conducted to explore the association between contact and the type of return to care visit (inpatient or emergency department versus outpatient). Veterans were classified as having a return to care visit of inpatient or emergency department if they had that type of utilization at any time on the day of return to care. Veterans were considered to have an outpatient return to care visit if they did not have any an inpatient admission or an emergency department visit on the day of return to care.

The post hoc bivariate cross tabular analysis indicated a significant association between type of return to care visit and contact status among the 941 veterans whom providers attempted to contact and who returned to care in the 545-day period (Fisher’s Exact Test  $p < .001$ ; Supplemental Table 3).

Supplemental Table 3. Contact status by return to care visit type among veterans who providers attempted to contact and who returned to care (n = 941)

	Contacted			
	Yes (n = 375)		No (n = 566)	
Return to Care Visit Type	N	%	N	%
Outpatient	329	88%	417	74%
Inpatient or Emergency Department	46	12%	149	26%