

APPENDIX 1 – CONSISTENCY OF ICD9 E-CODE USE IN PARTICIPATING HEALTH SYSTEMS

In the ICD9 coding system, diagnoses of self-inflicted injury/poisoning or injury/poisoning of undetermined intent require the recording of a separate E-code in addition to the primary injury or poisoning diagnosis. If this additional code is not recorded, it is not possible to classify an injury or poisoning event as self-inflicted, accidental, by assault, or having undetermined intent. Consequently, low rates of E-code use could lead to under-ascertainment of suicide attempts. As we have previously published (Liu et al, *Pharmacoepidemiology and Drug Safety*, 2014; 23:218), recording of E-codes varied widely across health systems in our Mental Health Research Network between 2000 and 2010. Mindful of this variation, health systems participating in this risk prediction modeling project were selected because of high rates of E-code use in 2010-2011. The table below shows the proportion of all injury and poisoning diagnoses in inpatient and emergency department settings during that period that were accompanied by any E-code diagnosis (accidental, assault, self-inflicted, or undetermined). These rates suggest that capture or ascertainment of self-inflicted injury/poisoning during the study period was incomplete, but the rate of incomplete ascertainment (false negative) due to failure to record E-code diagnoses was relatively low.

	KP Washington	KP Northwest	KP Hawaii	KP So. California	KP Colorado	Henry Ford	Health Partners
Inpatient	81%	75%	61%	77%	63%	90%	80%
ED	76%	67%	64%	91%	66%	63%	87%

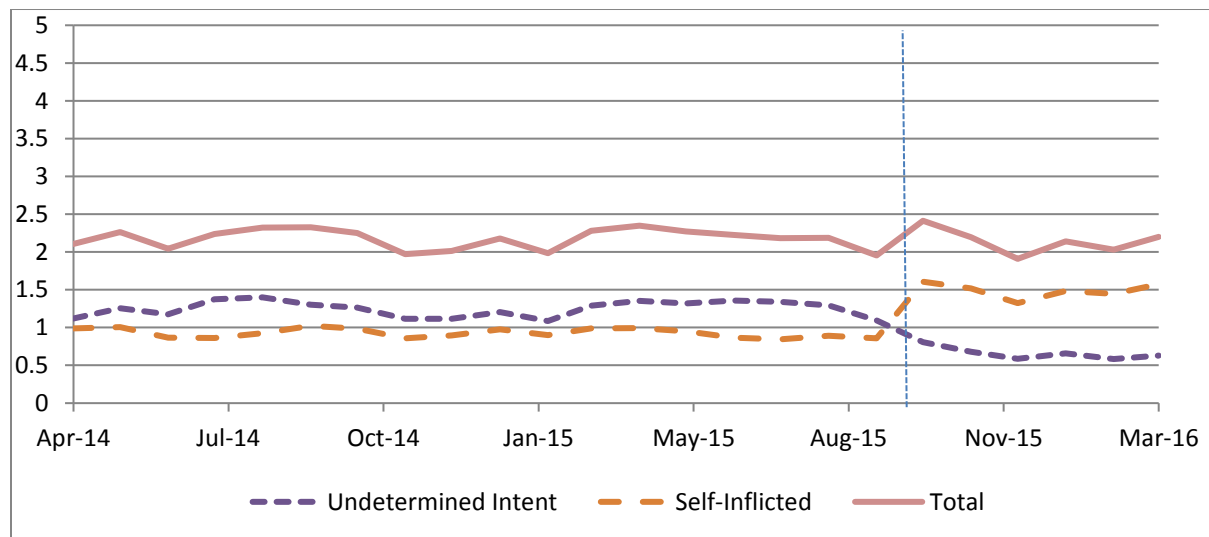
APPENDIX 2 – VALIDITY OF E-CODE DIAGNOSES OF DEFINITE AND UNDETERMINED SELF-INFLICTED INJURY IN PARTICIPATING HEALTH SYSTEMS

Some previous research suggests that accuracy of E-code diagnoses of self-inflicted injury/poisoning is poor in some health care systems or settings. Given that concern, we reviewed full-text electronic medical records for a sample of encounters from participating health systems in 2012 and 2013 receiving E-code diagnoses of definite self-inflicted injury/poisoning or injury/poisoning of undetermined intent. Trained chart reviewers determined whether text of provider notes clearly documented intentional self-inflicted injury or poisoning (e.g. “cut self”, “took overdose”). Results are shown in the table below. In the full sample, the rate of confirmation for encounters coded as self-inflicted was 79%, and the confirmation rate for encounters coded as undetermined intent was 71%. When the sample was limited to encounters by patients with recent mental health diagnosis or treatment (the criteria for inclusion in this risk prediction study), confirmation rates were 91% for events coded as self-inflicted and 80% for events coded as undetermined intent. These findings suggest low false-positive rates in these health systems during the study period when including both self-inflicted and “undetermined” intent events as probable suicide attempts.

E-Code Diagnosis	Total			With Recent Mental Health Diagnosis or Treatment		
	Number Reviewed	Number Confirmed	Rate (95% CI)	Number Reviewed	Number Confirmed	Rate (95% CI)
Self-inflicted	300	238	79% (74% to 83%)	229	208	91% (86% to 94%)
Undetermined	150	106	71% (63% to 77%)	123	98	80% (71% to 86%)

APPENDIX 3 – CHANGES IN CODING OF SELF-INFLICTED INJURY WITH TRANSITION FROM ICD9 TO ICD10

Coding of intent for injuries and poisonings changed significantly from the ICD9 to the ICD10 diagnostic system. Rather than using separate E-codes, the ICD10 system requires specific coding of intent within the primary diagnosis. One of our recent publications (Stewart et al, *Psychiatric Services*, 2017; 68:215) describes changes in recording of intent for injury/poisoning encounters across this transition in health systems participating in this risk prediction study. The figure from that publication is reproduced below. With the transition to ICD10 coding, the population rate of injury/poisoning encounters coded as undetermined intent decreased by more than half while the rate of injury/poisoning encounters coded as definitely self-inflicted increased by more than half. The total of those two rates (i.e. the definition of probable suicide attempt used for our analyses) was stable. We interpret this as evidence that most of the injury/poisoning events coded as having undetermined intent under the ICD9 E-code system were actually self-inflicted injuries or poisonings – and are now more accurately captured under the ICD10 system. We believe this argues strongly for use of the broader definition (including “undetermined” diagnoses) for our primary analyses.



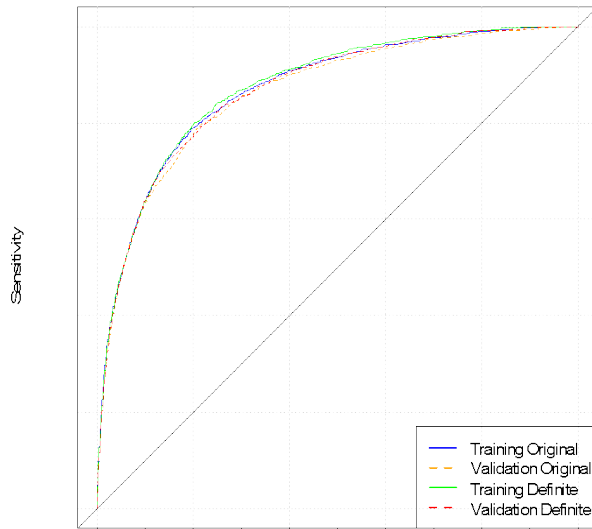
This finding also provides additional support for the sensitivity of our outcome definition. The switch from use of separate E-codes (which could be omitted) in ICD9 to mandatory coding of intent in ICD10 had no effect on the total rate of injuries and poisonings coded as either self-inflicted or having undetermined intent. Stability of the overall rate implies that failure to record E-code diagnoses did not result in significant under-counting of self-harm during the study period.

APPENDIX 4 – SENSITIVITY ANALYSES LIMITED TO EVENTS CODED AS DEFINITELY SELF-INFLICTED

Regarding Probable Suicide Attempts:

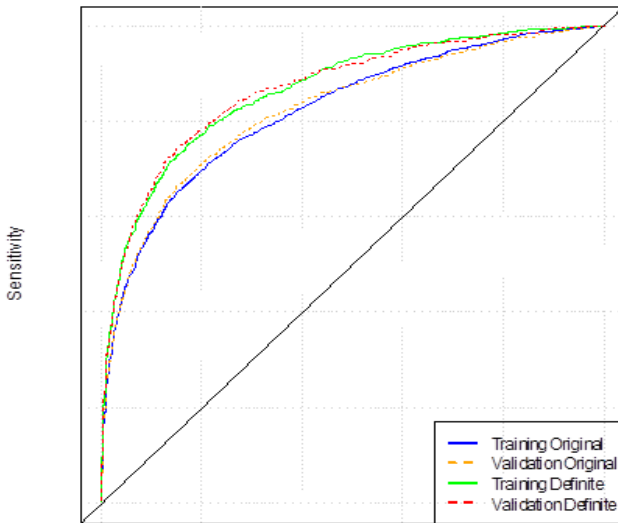
At the Kaiser Permanente Washington site, detailed data regarding ICD9 cause of injury codes are available for sensitivity analyses. At that site, 74% of originally included suicide attempt events were coded as definitely self-inflicted and 26% were coded as having undetermined intent. Using those data, we compared the performance of our final models for predicting broadly-defined suicide attempts (our original definition) and narrowly-defined suicide attempts (only injuries and poisonings classified as definitely self-inflicted) Results of those comparisons in the samples of mental health specialty and primary care visits are shown below.

MH Visits, Suicide attempt risk at 90 days



1 - Specificity

PC Visits, Suicide attempt risk at 90 days



1 - Specificity

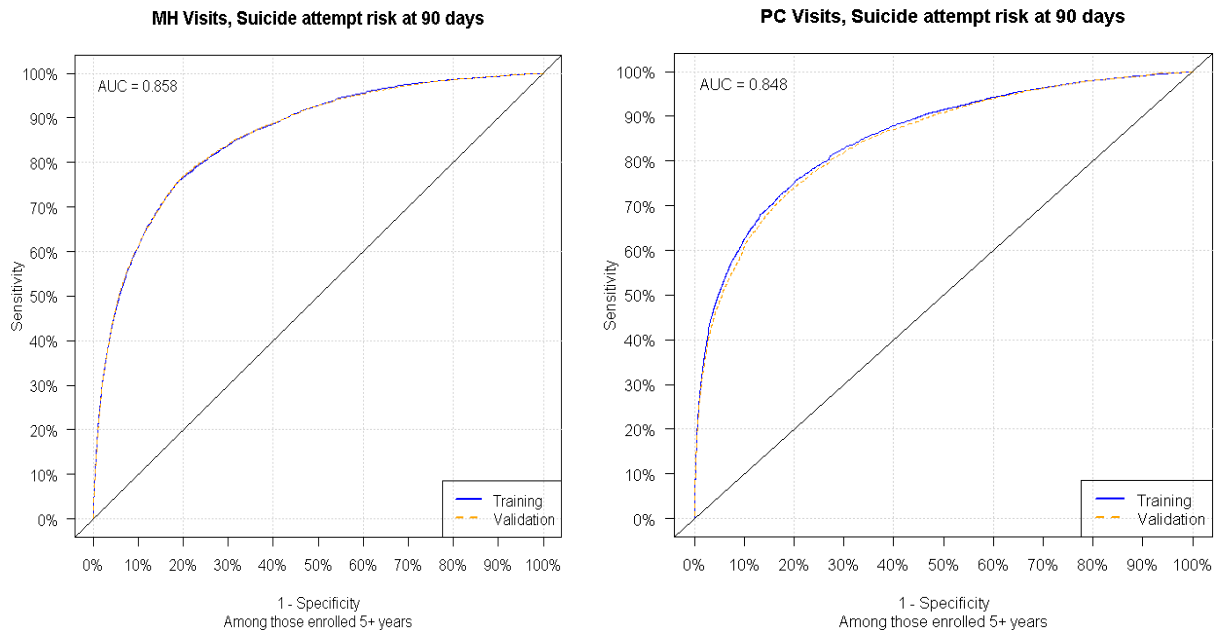
In the mental health specialty sample (left graph), predictive accuracy was essentially identical when using a broad or narrow definition. In the primary care sample (right graph), predictive accuracy was moderately superior for narrowly defined attempts. These findings suggest that our primary analyses using a broader definition give a conservative view of prediction model accuracy. Because our data suggest that the narrower definition of probable suicide attempt would miss one-quarter of true events, we believe our primary analyses should still consider the broader definition.

Regarding Probable Suicide Deaths:

At the Kaiser Permanente Washington site, detailed data regarding ICD10 cause of death codes are available for sensitivity analyses. At that site, 92% of originally included suicide death events were coded as definitely self-inflicted and 8% were coded as having undetermined intent. Using those data, we compared the performance of our final models for predicting broadly-defined suicide deaths (our original definition) narrowly-defined suicide deaths (only injuries and poisonings classified as definitely self-inflicted). For prediction of suicide death following a mental health specialty visit, C-statistics in the validation sample were 0.84 using our original definition and 0.83 using the narrower definition. For prediction of suicide death following an primary care visit with mental health diagnosis, C-statistics in the validation sample were 0.83 using our original definition and 0.82 using the narrower definition.

APPENDIX 5 – SENSITIVITY OF FINDINGS TO AVAILABILITY OF HISTORICAL DATA

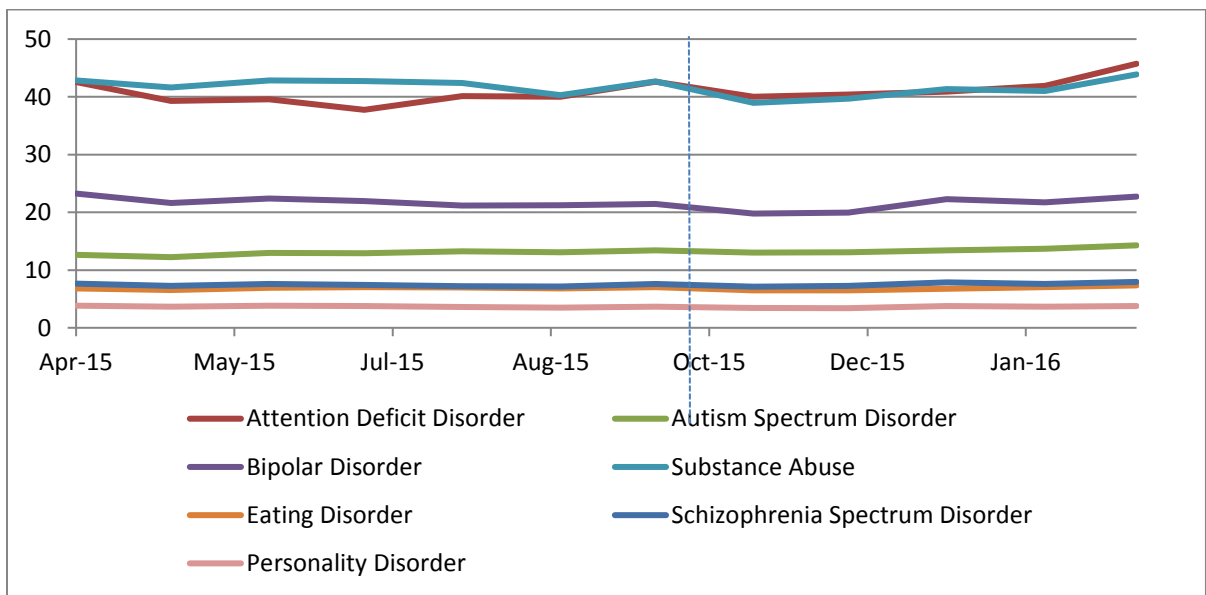
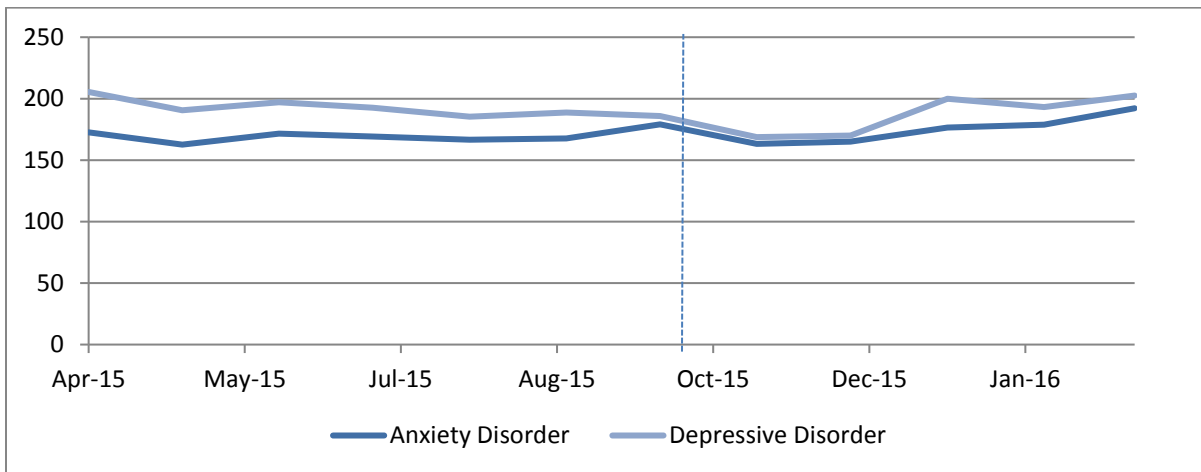
As shown in Table 1, at least five years of records data were available for 56% of mental health specialty visits and 56% of primary care visits. At least one year of records data were available for 87% of mental health specialty visits and 85% of primary care visits. Some predictors selected (Table 2) did consider diagnoses, prescriptions, or utilization up to five years prior to the sampled visit. Consequently, some predictor data could be missing or unobserved for visits preceded by less than five years of prior enrollment. We conducted secondary analyses, examining performance of our final models in the subgroup with at least five years of prior records data. Results are shown below. Model performance was not meaningfully different in those with complete prior data compared to the full sample. This is not surprising, given that models were developed or trained a real-world sample that included patients with incomplete prior data. Because this real-world population (all visits regardless of prior enrollment) is the group to which our results would be applied, we believe that our primary analyses should include all eligible visits, regardless of prior enrollment. Restricting models to patients with long duration of health system enrollment could both introduce bias and reduce generalizability.



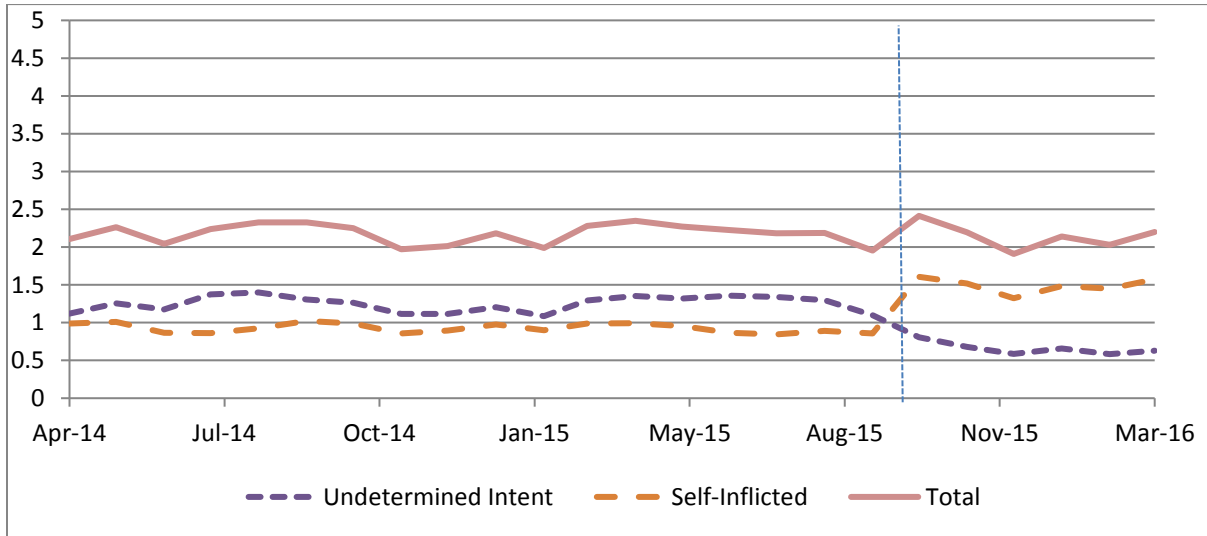
APPENDIX 6 – GENERALIZABILITY OF FINDINGS AFTER TRANSITION TO ICD-10 DIAGNOSES

The transition to the ICD-10 diagnostic system in October of 2015 could affect both recording of suicide attempt diagnoses and recording of mental health and substance use disorder variables contributing to predictor variables. While the classification structure for mental health and substance use disorder diagnoses did not change significantly from ICD-9 to ICD-10, the scheme for coding of self-harm and injury/poisoning of undetermined intent changed significantly.

We have examined rates of diagnoses for each of our predictor variables across the transition to ICD-10. As shown in the two graphs below (one above for more common diagnoses and one below for less common diagnoses) rates were quite stable across the transition in October, 2015



The graph below from one of our recent publications (Stewart et al, *Psychiatric Services*, 2017; 68:215) describes changes in recording of intent for injury/poisoning encounters across the ICD-9 to ICD-10 transition in health systems participating in this risk prediction study. With the transition to ICD10 coding, the population rate of injury/poisoning encounters coded as undetermined intent decreased by more than half while the rate of injury/poisoning encounters coded as definitely self-inflicted increased by more than half. The total of those two rates, however, was stable. Consequently, we observe no change in the rate of diagnoses of probable suicide attempt using our specification (including both diagnoses of definite self-harm and diagnoses of injury/poisoning with undetermined intent).



Given this stability in rates of both predictor and outcome diagnoses, we expect that our findings regarding accuracy of risk prediction models will also apply after the transition to ICD10. That expectation, however, would certainly require confirmation using new data from October 2015 forward. Our team expects to extract those data in early 2018.

APPENDIX 7 – SENSITIVITY ANALYSES USING 30-DAY OUTCOME WINDOW

Sensitivity analyses repeated model development and validation using a 30-day window for ascertainment of suicide attempts and suicide deaths. Strongest positive predictors selected are shown in the table below. Comparison with manuscript Table 2 shows that that predictors selected using a 30-day outcome window were quite similar to those selected using a 90-day window.

SUICIDE ATTEMPT FOLLOWING:		SUICIDE DEATH FOLLOWING:	
MENTAL HEALTH SPECIALTY VISIT (of 78 predictors selected)	PRIMARY CARE VISIT (of 90 predictors selected)	MENTAL HEALTH SPECIALTY VISIT (of 29 predictors selected)	PRIMARY CARE VISIT (of 12 predictors selected)
Depression diagnosis in last 5 yrs.	Suicide attempt diagnosis in last 5 yrs.	Mental health ER visit in last 3 mos	Mental health inpatient stay in last 3 mos.
Age 13-17 with Female	Depression diagnosis in last 5 yrs.	2 nd Gen. Antipsychotic Rx in last 5 years	Mental health ER visit in last 3 mos.
Drug abuse diagnosis in last 5 yrs.	Drug abuse diagnosis in last 5 yrs.	Hypnotic Drug Rx. in last year.	Mental health ER visit in last year.
PHQ-9 Item 9 score =3 in last 90 days	Suicide attempt diagnosis in last 3 mos.	Benzodiazepine Rx. in last 3 mos.	PHQ-9 Item 9 score=3 with PHQ8 score
Drug use disorder Diag. in last 5 yrs	Age 13-17 with Female	Mental health inpatient stay in last year	Number of PHQ9 responses in last 90 days
Suicide attempt diagnosis in last year	PHQ-9 Item 9 score =3 in last year	Mental health inpatient stay in last 3 mos	Suicide attempt diagnosis in last 5 yrs.
Mental health inpatient stay in last year	Suicide attempt diagnosis in last year	Antidepressant Rx. in last 3 mos.	Depression diagnosis in last 5 yrs.
Suicide attempt diagnosis in last 3 mos.	Personality disorder diag. in last 5 yrs.	Charlson Comorbidity Score	PHQ-9 item 9 score=2 with Age
Antidepressant Rx. in last yr.	Alcohol use diagnosis in last 5 yrs.	Number of PHQ9 responses in last 90 days	PHQ-8 score=3 with Age
Personality disorder diag. in last 5 yrs.	Anxiety disorder diag. in last 5 yrs.	PHQ-9 item 9 score = 1 with Age	Suicide attempt diag. in past 5 yrs with PHQ8 score
Benzodiazepine Rx. in last 3 mos.	Benzodiazepine Rx. in last 3 mos.	PHQ-9 item 9 score = 3 with Age	PHQ-9 Item 9 score=3 with Charlson Comorbidity Score
PHQ-9 Item 9 score=2 in last year	Eating Disorder diagnosis in last 5 yrs.	Suicide attempt diagnosis in last 5 yrs.	Fewer days since last visit
Self-inflicted laceration in last 5 yrs	Mental health ER visit in last 3 mos.	Depression diagnosis in last 5 yrs.	
Antidepressant Rx. in last 3 mos.	Other psychosis diagnosis in last year	PHQ-9 Item 9 score = 2 with Age	
Eating Disorder diagnosis in last 5 yrs.	PHQ-9 Item 9 score =1 in last year	Schizophrenia diagnosis in last 5 yrs.	

The table below compares C-statistics for 30- and 90-day outcome windows for each of the four models. Model performance was essentially identical using the 30-day outcome window except for prediction of suicide death following a primary care visit. In that case, accuracy prediction was modestly less accurate, likely reflecting the much smaller number of events (suicide deaths within 30 days of primary care visit).

	30-day outcome window	90-day outcome window
Suicide Attempt following MH Specialty Visit	0.86	0.85
Suicide Death following MH Specialty Visit	0.85	0.86
Suicide Attempt following Primary Care Visit	0.86	0.85
Suicide Death following Primary Care Visit	0.80	0.83

APPENDIX 8 – MODEL PERFORMANCE IN STRATA OF VALIDATION SAMPLE

Sensitivity analyses examined model performance across strata of the validation sample defined by study site, sex, and age. As shown below, model performance was similar across all strata.

	C-statistic for prediction of suicide attempt following MH specialty visit	C-statistic for prediction of suicide attempt following primary care visit
Study Sites		
HealthPartners	0.85	0.84
Henry Ford	0.82	0.82
KP Colorado	0.84	0.83
KP Hawaii	0.84	0.85
KP Northwest	0.87	0.84
KP Southern California	0.85	0.86
KP Washington	0.84	0.83
Sex		
Male	0.85	0.85
Female	0.85	0.85
Age		
13-17	0.83	0.83
18 and older	0.86	0.86

APPENDIX 9A – CANDIDATE PREDICTORS AND INTERACTION TERMS INCLUDED IN VARIABLE SELECTION MODELS (DETAILED SPECIFICATIONS FOR EACH PREDICTOR ARE AVAILABLE AT WWW.GITHUB.COM/MHRESEARCHNETWORK).

Variable	Description
Age	Age in years
ac1	Age 13-17
ac2	Age 18-29
ac3	Age 30-44
ac4	Age 45-64
ac5	Age 65+
ac1f	Age 13-17 * (gender=F)
ac3f	Age 30-44 * (gender=F)
ac4f	Age 45-64 * (gender=F)
ac5f	Age 65+ * (gender=F)
Not Enrolled	VDW indicates individual is not enrolled on date of visit
Medicaid	Insurance Type, Exclusive categories
commercial	Insurance Type, Exclusive categories
Privatepay	Insurance Type, Exclusive categories
statesubsidized	Insurance Type, Exclusive categories
Selffunded	Insurance Type, Exclusive categories
Medicare	Insurance Type, Exclusive categories
highdeductible	Insurance Type, Exclusive categories
Other	Insurance Type, Exclusive categories
first_visit	1/0. First recorded visit for individual
days_since_prev	Days since previous visit.
Female	Gender=F
dep_dx_pre5y_noi_cumulative	Depression DX, (0,5] years prior
dep_dx_pre5y	Depression DX, [1,5] years prior
anx_dx_pre5y_noi_cumulative	Anxiety DX, (0,5] years prior
anx_dx_pre5y	Anxiety DX, [1,5] years prior
bip_dx_pre5y_noi_cumulative	Bipolar DX, (0,5] years prior
bip_dx_pre5y	Bipolar DX, [1,5] years prior
sch_dx_pre5y_noi_cumulative	Schizophrenia DX, (0,5] years prior
sch_dx_pre5y	Schizophrenia DX, [1,5] years prior
oth_dx_pre5y_noi_cumulative	Other Psychosis DX, (0,5] years prior
oth_dx_pre5y	Other psychosis DX, [1,5] years prior
dem_dx_pre5y_noi_cumulative	Dementia DX, (0,5] years prior
dem_dx_pre5y	Dementia DX, [1,5] years prior
add_dx_pre5y_noi_cumulative	ADD DX, (0,5] years prior
add_dx_pre5y	ADD DX, [1,5] years prior
asd_dx_pre5y_noi_cumulative	ASD DX, (0,5] years prior

asd_dx_pre5y	ASD DX, [1,5] years prior
per_dx_pre5y_noi_cumulative	Personality disorder DX, (0,5] years prior
per_dx_pre5y	Personality disorder DX, [1,5] years prior
alc_dx_pre5y_noi_cumulative	Alcohol use disorder DX, (0,5] years prior
alc_dx_pre5y	Alcohol use disorder DX, [1,5] years prior
pts_dx_pre5y_noi_cumulative	PTSD DX, (0,5] years prior
pts_dx_pre5y	PTSD DX, [1,5] years prior
eat_dx_pre5y_noi_cumulative	Eating disorder DX, (0,5] years prior
eat_dx_pre5y	Eating disorder DX, [1,5] years prior
tbi_dx_pre5y_noi_cumulative	TBI DX, (0,5] years prior
tbi_dx_pre5y	TBI DX, [1,5] years prior
dru_dx_pre5y_noi_cumulative	Drug use disorder DX, (0,5] years prior
dru_dx_pre5y	Drug use disorder DX, [1,5] years prior
antidep_rx_pre3m	Antidepressant rx (0,3] months
antidep_rx_pre1y_cumulative	Antidepressant rx (0, 1] year
antidep_rx_pre5y_cumulative	Antidepressant rx (0, 5] years
benzo_rx_pre3m	Benzo rx (0,3] months
benzo_rx_pre1y_cumulative	Benzo rx (0, 1] year
benzo_rx_pre5y_cumulative	Benzo rx (0, 5] years
hypno_rx_pre3m	Hypnotic rx (0,3] months
hypno_rx_pre1y_cumulative	Hypnotic rx (0, 1] year
hypno_rx_pre5y_cumulative	Hypnotic rx (0, 5] years
sga_rx_pre3m	SGA rx (0,3] months
sga_rx_pre1y_cumulative	SGA rx (0, 1] year
sga_rx_pre5y_cumulative	SGA rx (0, 5] years
mh_ip_pre3m	MH Inpatient stay (0, 3] months
mh_ip_pre1y_cumulative	MH Inpatient stay (0, 1] year
mh_ip_pre5y_cumulative	MH Inpatient stay (0, 5] years
mh_op_pre3m	MH outpatient utilization (0, 3] months
mh_op_pre1y_cumulative	MH outpatient utilization (0, 1] year
mh_op_pre5y_cumulative	MH outpatient utilization (0, 5] years
mh_ed_pre3m	MH ED utilization (0, 3] months
mh_ed_pre1y_cumulative	MH ED utilization (0, 1] year
mh_ed_pre5y_cumulative	MH ED utilization (0, 5] years
any_sui_att_pre3m	Prior suicide attempt (0, 3] months
any_sui_att_pre1y_cumulative	Prior suicide attempt (0, 1] year
any_sui_att_pre5y_cumulative	Prior suicide attempt (0, 5] years
lvi_sui_att_pre3m	LVI suicide attempt (0, 3] months
lvi_sui_att_pre1y_cumulative	LVI suicide attempt (0, 1] year
lvi_sui_att_pre5y_cumulative	LVI suicide attempt (0, 5] years
ovi_sui_att_pre3m	OVI suicide attempt (0, 3] months

ovi_sui_att_pre1y_cumulative	OVI suicide attempt (0, 1] year
ovi_sui_att_pre5y_cumulative	OVI suicide attempt (0, 5] years
any_inj_poi_pre3m	Inj/Poi suicide attempt (0, 3] months
any_inj_poi_pre1y_cumulative	Inj/Poi suicide attempt (0, 1] year
any_inj_poi_pre5y_cumulative	Inj/Poi suicide attempt (0, 5] years
current_pregnancy	Delivery 180 days after index visit or earlier
del_pre_1_90	Delivery in prior [1, 90] days of index visit
del_pre_1_180	Delivery in prior [1, 180] days of index visit
del_pre_1_365	Delivery in prior [1, 365] days of index visit
any_sui_att_pre5y_cumulative_f	Prior suicide attempt (0, 5] years * (gender=F)
any_sui_att_pre5y_cumulative_a	Prior suicide attempt (0, 5] years * (age)
charlson_score	Charlson score on index date
charlson_a	Charlson score on index date * (age)
charlson_mi	Individual Charlson indicators
charlson_chd	Individual Charlson indicators
charlson_pvd	Individual Charlson indicators
charlson_cvd	Individual Charlson indicators
charlson_dem	Individual Charlson indicators
charlson_cpd	Individual Charlson indicators
charlson_rhd	Individual Charlson indicators
charlson_pud	Individual Charlson indicators
charlson_mlivd	Individual Charlson indicators
charlson_diab	Individual Charlson indicators
charlson_diabc	Individual Charlson indicators
charlson_plegia	Individual Charlson indicators
charlson_ren	Individual Charlson indicators
charlson_malign	Individual Charlson indicators
charlson_slivd	Individual Charlson indicators
charlson_mst	Individual Charlson indicators
charlson_aids	Individual Charlson indicators
raceAsian_asa	VDW Race1 = Asian * (Prior suicide attempt (0, 5] years)
raceBlack_asa	VDW Race1 = Black * (Prior suicide attempt (0, 5] years)
raceHP_asa	VDW Race1 = HI/PI * (Prior suicide attempt (0, 5] years)
raceIN_asa	VDW Race1 = Native American / Alaskan Native * (Prior suicide attempt (0, 5] years)
raceMUOT_asa	VDW Race1 = Multiple/Other * (Prior suicide attempt (0, 5] years)
raceUN_asa	VDW Race1 = Unknown * (Prior suicide attempt (0, 5] years)
hispanic_asa	VDW Hispanic = Yes * (Prior suicide attempt (0, 5] years)
raceAsian	VDW Race1 = Asian
raceBlack	VDW Race1 = Black
raceHP	VDW Race1 = HI/PI
raceIN	VDW Race1 = Native American / Alaskan Native

raceMUOT	VDW Race1 = Multiple/Other
raceUN	VDW Race1 = Unknown
raceWH	VDW Race1 = White
Hispanic	VDW Hispanic = Yes
raceAsian_f	VDW Race1 = Asian * (Gender=F)
raceBlack_f	VDW Race1 = Black * (Gender=F)
raceHP_f	VDW Race1 = HI/PI * (Gender=F)
raceIN_f	VDW Race1 = Native American / Alaskan Native * (Gender=F)
raceMUOT_f	VDW Race1 = Multiple/Other * (Gender=F)
raceUN_f	VDW Race1 = Unknown * (Gender=F)
hispanic_f	VDW Hispanic = Yes * (Gender=F)
census_missing	Census variables observed (0/1)
hhld_inc_lt40k	Neighborhood income 40 (<\$40k/>=\$40k)
coll_deg_lt25p	Neighborhood education (<25% coll grad/>=25% coll grad)
phqNumber90	Total # of PHQs in prior 90 days
phqMode90_0	Modal PHQ9 value in prior 90 days = 0
phqMode90_1	Modal PHQ9 value in prior 90 days = 1
phqMode90_2	Modal PHQ9 value in prior 90 days = 2
phqMax90_0	Maximum PHQ9 value in prior 90 days =0
phqMax90_1	Maximum PHQ9 value in prior 90 days =1
phqMax90_2	Maximum PHQ9 value in prior 90 days =2
phqMax90_3	Maximum PHQ9 value in prior 90 days =3
phqNumber183	Total # of PHQs in prior 183 days
phqMode183_0	Modal PHQ9 value in prior 183 days = 0
phqMode183_1	Modal PHQ9 value in prior 183 days = 1
phqMode183_2	Modal PHQ9 value in prior 183 days = 2
phqMax183_0	Maximum PHQ9 value in prior 183 days =0
phqMax183_1	Maximum PHQ9 value in prior 183 days =1
phqMax183_2	Maximum PHQ9 value in prior 183 days =2
phqMax183_3	Maximum PHQ9 value in prior 183 days =3
phqNumber365	Total # of PHQs in prior 365 days
phqMode365_0	Modal PHQ9 value in prior 365 days = 0
phqMode365_1	Modal PHQ9 value in prior 365 days = 1
phqMode365_2	Modal PHQ9 value in prior 365 days = 2
phqMax365_0	Maximum PHQ9 value in prior 365 days =0
phqMax365_1	Maximum PHQ9 value in prior 365 days =1
phqMax365_2	Maximum PHQ9 value in prior 365 days =2
phqMax365_3	Maximum PHQ9 value in prior 365 days =3
raceAsian_de	VDW Race1 = Asian * (Depression DX, [0,5] years prior)
raceBlack_de	VDW Race1 = Black * (Depression DX, [0,5] years prior)
raceHP_de	VDW Race1 = HI/PI * (Depression DX, [0,5] years prior)

raceIN_de	VDW Race1 = Native American / Alaskan Native * (Depression DX, [0,5] years prior)
raceMUOT_de	VDW Race1 = Multiple/Other * (Depression DX, [0,5] years prior)
raceUN_de	VDW Race1 = Unknown * (Depression DX, [0,5] years prior)
hispanic_de	VDW Hispanic = Yes * (Depression DX, [0,5] years prior)
raceAsian_an	VDW Race1 = Asian * (Anxiety DX, [0,5] years prior)
raceBlack_an	VDW Race1 = Black * (Anxiety DX, [0,5] years prior)
raceHP_an	VDW Race1 = HI/PI * (Anxiety DX, [0,5] years prior)
raceIN_an	VDW Race1 = Native American / Alaskan Native * (Anxiety DX, [0,5] years prior)
raceMUOT_an	VDW Race1 = Multiple/Other * (Anxiety DX, [0,5] years prior)
raceUN_an	VDW Race1 = Unknown * (Anxiety DX, [0,5] years prior)
hispanic_an	VDW Hispanic = Yes * (Anxiety DX, [0,5] years prior)
raceAsian_bi	VDW Race1 = Asian * (Bipolar DX, [0,5] years prior)
raceBlack_bi	VDW Race1 = Black * (Bipolar DX, [0,5] years prior)
raceHP_bi	VDW Race1 = HI/PI * (Bipolar DX, [0,5] years prior)
raceIN_bi	VDW Race1 = Native American / Alaskan Native * (Bipolar DX, [0,5] years prior)
raceMUOT_bi	VDW Race1 = Multiple/Other * (Bipolar DX, [0,5] years prior)
raceUN_bi	VDW Race1 = Unknown * (Bipolar DX, [0,5] years prior)
hispanic_bi	VDW Hispanic = Yes * (Bipolar DX, [0,5] years prior)
raceAsian_sc	VDW Race1 = Asian * (Schizophrenia DX, [0,5] years prior)
raceBlack_sc	VDW Race1 = Black * (Schizophrenia DX, [0,5] years prior)
raceHP_sc	VDW Race1 = HI/PI * (Schizophrenia DX, [0,5] years prior)
raceIN_sc	VDW Race1 = Native American / Alaskan Native * (Schizophrenia DX, [0,5] years prior)
raceMUOT_sc	VDW Race1 = Multiple/Other * (Schizophrenia DX, [0,5] years prior)
raceUN_sc	VDW Race1 = Unknown * (Schizophrenia DX, [0,5] years prior)
hispanic_sc	VDW Hispanic = Yes * (Schizophrenia DX, [0,5] years prior)
dep_dx_pre5y_cumulative	Depression DX, [0,5] years prior
dep_dx_pre5y_cumulative_f	Depression DX, [0,5] years prior * (gender=F)
dep_dx_pre5y_cumulative_a	Depression DX, [0,5] years prior * (age)
anx_dx_pre5y_cumulative	Anxiety DX, [0,5] years prior
anx_dx_pre5y_cumulative_f	Anxiety DX, [0,5] years prior * (gender=F)
anx_dx_pre5y_cumulative_a	Anxiety DX, [0,5] years prior * (age)
bip_dx_pre5y_cumulative	Bipolar DX, [0,5] years prior
bip_dx_pre5y_cumulative_f	Bipolar DX, [0,5] years prior * (gender=F)
bip_dx_pre5y_cumulative_a	Bipolar DX, [0,5] years prior * (age)
sch_dx_pre5y_cumulative	Schizophrenia DX, [0,5] years prior
sch_dx_pre5y_cumulative_f	Schizophrenia DX, [0,5] years prior * (gender=F)
sch_dx_pre5y_cumulative_a	Schizophrenia DX, [0,5] years prior * (age)
oth_dx_pre5y_cumulative	Other Psychosis DX, [0,5] years prior
dem_dx_pre5y_cumulative	Dementia DX, [0,5] years prior

add_dx_pre5y_cumulative	ADD DX, [0,5] years prior
asd_dx_pre5y_cumulative	ASD DX, [0,5] years prior
per_dx_pre5y_cumulative	Personality disorder DX, [0,5] years prior
alc_dx_pre5y_cumulative	Alcohol use disorder DX, [0,5] years prior
dru_dx_pre5y_cumulative	Drug use disorder DX, [0,5] years prior
pts_dx_pre5y_cumulative	PTSD DX, [0,5] years prior
eat_dx_pre5y_cumulative	Eating disorder DX, [0,5] years prior
tbi_dx_pre5y_cumulative	TBI DX, [0,5] years prior
phq8_index_score_calc	PHQ8 total score
phq8_missing	PHQ8 missing at visit (1 if missing)
phq8_index_score_calc_f	PHQ8 total score * (gender=F)
phq8_missing_f	PHQ8 missing at visit (1 if missing) * (gender=F)
raceAsian_8	VDW Race1 = Asian * (PHQ8 total score)
raceBlack_8	VDW Race1 = Black * (PHQ8 total score)
raceHP_8	VDW Race1 = HI/PI * (PHQ8 total score)
raceIN_8	VDW Race1 = Native American / Alaskan Native * (PHQ8 total score)
raceMUOT_8	VDW Race1 = Multiple/Other * (PHQ8 total score)
raceUN_8	VDW Race1 = Unknown * (PHQ8 total score)
hispanic_8	VDW Hispanic = Yes * (PHQ8 total score)
age_8	Age * (PHQ8 total score)
q9_0	PHQ9 = 0 at index visit
q9_1	PHQ9 = 1 at index visit
q9_2	PHQ9 = 2 at index visit
q9_3	PHQ9 = 3 at index visit
q9_0_f	PHQ9 = 0 * (gender=F)
q9_1_f	PHQ9 = 1 * (gender=F)
q9_2_f	PHQ9 = 2 * (gender=F)
q9_3_f	PHQ9 = 3 * (gender=F)
q9_0_a	PHQ9 = 0 * (age)
q9_1_a	PHQ9 = 1 * (age)
q9_2_a	PHQ9 = 2 * (age)
q9_3_a	PHQ9 = 3 * (age)
raceAsian_q90	VDW Race1 = Asian * (PHQ9=0)
raceBlack_q90	VDW Race1 = Black * (PHQ9=0)
raceHP_q90	VDW Race1 = HI/PI * (PHQ9=0)
raceIN_q90	VDW Race1 = Native American / Alaskan Native * (PHQ9=0)
raceMUOT_q90	VDW Race1 = Multiple/Other * (PHQ9=0)
raceUN_q90	VDW Race1 = Unknown * (PHQ9=0)
hispanic_q90	VDW Hispanic = Yes * (PHQ9=0)
raceAsian_q91	VDW Race1 = Asian * (PHQ9=1)
raceBlack_q91	VDW Race1 = Black * (PHQ9=1)

raceHP_q91	VDW Race1 = HI/PI * (PHQ9=1)
raceIN_q91	VDW Race1 = Native American / Alaskan Native * (PHQ9=1)
raceMUOT_q91	VDW Race1 = Multiple/Other * (PHQ9=1)
raceUN_q91	VDW Race1 = Unknown * (PHQ9=1)
hispanic_q91	VDW Hispanic = Yes * (PHQ9=1)
raceAsian_q92	VDW Race1 = Asian * (PHQ9=2)
raceBlack_q92	VDW Race1 = Black * (PHQ9=2)
raceHP_q92	VDW Race1 = HI/PI * (PHQ9=2)
raceIN_q92	VDW Race1 = Native American / Alaskan Native * (PHQ9=2)
raceMUOT_q92	VDW Race1 = Multiple/Other * (PHQ9=2)
raceUN_q92	VDW Race1 = Unknown * (PHQ9=2)
hispanic_q92	VDW Hispanic = Yes * (PHQ9=2)
raceAsian_q93	VDW Race1 = Asian * (PHQ9=3)
raceBlack_q93	VDW Race1 = Black * (PHQ9=3)
raceHP_q93	VDW Race1 = HI/PI * (PHQ9=3)
raceIN_q93	VDW Race1 = Native American / Alaskan Native * (PHQ9=3)
raceMUOT_q93	VDW Race1 = Multiple/Other * (PHQ9=3)
raceUN_q93	VDW Race1 = Unknown * (PHQ9=3)
hispanic_q93	VDW Hispanic = Yes * (PHQ9=3)
q9_0_8	PHQ9 = 0 * (PHQ8 total score)
q9_1_8	PHQ9 = 1 * (PHQ8 total score)
q9_2_8	PHQ9 = 2 * (PHQ8 total score)
q9_3_8	PHQ9 = 3 * (PHQ8 total score)
q9_0_c	PHQ9 = 0 * (Charlson score)
q9_1_c	PHQ9 = 1 * (Charlson score)
q9_2_c	PHQ9 = 2 * (Charlson score)
q9_3_c	PHQ9 = 3 * (Charlson score)
q9_0_de	PHQ9 = 0 * (Depression DX, [0,5] years prior)
q9_1_de	PHQ9 = 1 * (Depression DX, [0,5] years prior)
q9_2_de	PHQ9 = 2 * (Depression DX, [0,5] years prior)
q9_3_de	PHQ9 = 3 * (Depression DX, [0,5] years prior)
q9_0_an	PHQ9 = 0 * (Anxiety DX, [0,5] years prior)
q9_1_an	PHQ9 = 1 * (Anxiety DX, [0,5] years prior)
q9_2_an	PHQ9 = 2 * (Anxiety DX, [0,5] years prior)
q9_3_an	PHQ9 = 3 * (Anxiety DX, [0,5] years prior)
q9_0_bi	PHQ9 = 0 * (Bipolar DX, [0,5] years prior)
q9_1_bi	PHQ9 = 1 * (Bipolar DX, [0,5] years prior)
q9_2_bi	PHQ9 = 2 * (Bipolar DX, [0,5] years prior)
q9_3_bi	PHQ9 = 3 * (Bipolar DX, [0,5] years prior)
q9_0_sc	PHQ9 = 0 * (Schizophrenia DX, [0,5] years prior)
q9_1_sc	PHQ9 = 1 * (Schizophrenia DX, [0,5] years prior)

q9_2_sc	PHQ9 = 2 * (Schizophrenia DX, [0,5] years prior)
q9_3_sc	PHQ9 = 3 * (Schizophrenia DX, [0,5] years prior)
q9_0_al	PHQ9 = 0 * (age)
q9_1_al	PHQ9 = 1 * (age)
q9_2_al	PHQ9 = 2 * (age)
q9_3_al	PHQ9 = 3 * (age)
q9_0_dr	PHQ9 = 0 * (age)
q9_1_dr	PHQ9 = 1 * (age)
q9_2_dr	PHQ9 = 2 * (age)
q9_3_dr	PHQ9 = 3 * (age)
q9_0_pe	PHQ9 = 0 * (age)
q9_1_pe	PHQ9 = 1 * (age)
q9_2_pe	PHQ9 = 2 * (age)
q9_3_pe	PHQ9 = 3 * (age)
any_sui_att_pre5y_cumulative_8	Prior suicide attempt (0, 5] years * (PHQ8 total score)
any_sui_att_pre5y_cumulative_c	Prior suicide attempt (0, 5] years * (Charlson score)
any_sui_att_pre5y_cumulative_d e	Prior suicide attempt (0, 5] years * (Depression DX, [0,5] years prior)
any_sui_att_pre5y_cumulative_a n	Prior suicide attempt (0, 5] years * (Anxiety DX, [0,5] years prior)
any_sui_att_pre5y_cumulative_b i	Prior suicide attempt (0, 5] years * (Bipolar DX, [0,5] years prior)
any_sui_att_pre5y_cumulative_s c	Prior suicide attempt (0, 5] years * (Schizophrenia DX, [0,5] years prior)
any_sui_att_pre5y_cumulative_a l	Prior suicide attempt (0, 5] years * (Alcohol use disorder [0,5] years prior)
any_sui_att_pre5y_cumulative_d r	Prior suicide attempt (0, 5] years * (Drug use disorder [0,5] years prior)
any_sui_att_pre5y_cumulative_p e	Prior suicide attempt (0, 5] years * (Personality disorder [0,5] years prior)
phqMax90_0_q90	Maximum PHQ9 value in prior 90 days =0 * (PHQ9 index = 0)
phqMax90_1_q90	Maximum PHQ9 value in prior 90 days =1 * (PHQ9 index = 0)
phqMax90_2_q90	Maximum PHQ9 value in prior 90 days =2 * (PHQ9 index = 0)
phqMax90_3_q90	Maximum PHQ9 value in prior 90 days =3 * (PHQ9 index = 0)
phqMax90_0_q91	Maximum PHQ9 value in prior 90 days =0 * (PHQ9 index = 1)
phqMax90_1_q91	Maximum PHQ9 value in prior 90 days =1 * (PHQ9 index = 1)
phqMax90_2_q91	Maximum PHQ9 value in prior 90 days =2 * (PHQ9 index = 1)
phqMax90_3_q91	Maximum PHQ9 value in prior 90 days =3 * (PHQ9 index = 1)
phqMax90_0_q92	Maximum PHQ9 value in prior 90 days =0 * (PHQ9 index = 2)
phqMax90_1_q92	Maximum PHQ9 value in prior 90 days =1 * (PHQ9 index = 2)
phqMax90_2_q92	Maximum PHQ9 value in prior 90 days =2 * (PHQ9 index = 2)
phqMax90_3_q92	Maximum PHQ9 value in prior 90 days =3 * (PHQ9 index = 2)
phqMax90_0_q93	Maximum PHQ9 value in prior 90 days =0 * (PHQ9 index = 3)
phqMax90_1_q93	Maximum PHQ9 value in prior 90 days =1 * (PHQ9 index = 3)
phqMax90_2_q93	Maximum PHQ9 value in prior 90 days =2 * (PHQ9 index = 3)

phqMax90_3_q93

Maximum PHQ9 value in prior 90 days =3 * (PHQ9 index = 3)

APPENDIX 9B – COEFFICIENTS FOR PREDICTION OF SUICIDE ATTEMPT IN 90 DAYS FOLLOWING MENTAL HEALTH SPECIALTY VISIT.

	Coefficient	Std. Err.	Z score	p value	Lower 95% Conf Limit	Upper 95% Conf Limit
Constant	-5.497382	0.1526108	-36.02	0.0000	-5.796494	-5.19827
Age	-0.034902	0.0052251	-6.68	0.0000	-0.045143	-0.0246611
ac1	0.178448	0.0765344	2.33	0.0200	0.0284434	0.3284526
ac3	-0.0358015	0.0779359	-0.46	0.6460	-0.1885529	0.11695
ac4	-0.0197698	0.1428961	-0.14	0.8900	-0.299841	0.2603014
ac5	0.3466038	0.226428	1.53	0.1260	-0.0971869	0.7903945
ac1f	0.5063412	0.0709917	7.13	0.0000	0.3672	0.6454823
Commercial	-0.0128649	0.0533821	-0.24	0.8100	-0.1174919	0.0917622
Privatepay	0.0561249	0.067065	0.84	0.4030	-0.0753201	0.1875699
Medicare	0.0171635	0.0786832	0.22	0.8270	-0.1370527	0.1713797
days_since_prev	-0.0002604	0.000094	-2.77	0.0060	-0.0004446	-0.0000761
dep_dx_pre5y	-0.1706591	0.0407284	-4.19	0.0000	-0.2504852	-0.090833
anx_dx_pre5y	-0.198161	0.0453207	-4.37	0.0000	-0.2869878	-0.1093341
dru_dx_pre5y	-0.0584846	0.059373	-0.99	0.3250	-0.1748536	0.0578843
antidep_rx_pre3m	0.1840148	0.0490479	3.75	0.0000	0.0878826	0.280147
antidep_rx_pre1y_cumulative	0.1500438	0.0816689	1.84	0.0660	-0.0100243	0.3101119
antidep_rx_pre5y_cumulative	0.1732092	0.0786609	2.2	0.0280	0.0190367	0.3273817
benzo_rx_pre3m	0.3239251	0.0553329	5.85	0.0000	0.2154746	0.4323756
benzo_rx_pre1y_cumulative	0.1700364	0.0696374	2.44	0.0150	0.0335495	0.3065232
benzo_rx_pre5y_cumulative	-0.1660521	0.0669744	-2.48	0.0130	-0.2973196	-0.0347846
hypno_rx_pre3m	0.1012587	0.0894787	1.13	0.2580	-0.0741163	0.2766336
hypno_rx_pre1y_cumulative	0.0108364	0.0931915	0.12	0.9070	-0.1718156	0.1934884
hypno_rx_pre5y_cumulative	0.1058904	0.0679549	1.56	0.1190	-0.0272988	0.2390797
sga_rx_pre3m	0.0223592	0.0585382	0.38	0.7020	-0.0923735	0.1370919
sga_rx_pre1y_cumulative	0.1591924	0.0850285	1.87	0.0610	-0.0074603	0.3258452
sga_rx_pre5y_cumulative	0.1811564	0.0765831	2.37	0.0180	0.0310563	0.3312566
mh_ip_pre3m	0.125625	0.0635033	1.98	0.0480	0.0011608	0.2500893
mh_ip_pre1y_cumulative	0.3349677	0.0652296	5.14	0.0000	0.20712	0.4628153
mh_ip_pre5y_cumulative	0.0636899	0.0632146	1.01	0.3140	-0.0602084	0.1875881
mh_op_pre1y_cumulative	-0.2080869	0.0403627	-5.16	0.0000	-0.2871964	-0.1289774
mh_op_pre5y_cumulative	-0.1074946	0.0506318	-2.12	0.0340	-0.2067311	-0.0082582
mh_ed_pre3m	0.2510373	0.0545116	4.61	0.0000	0.1441965	0.3578781
mh_ed_pre1y_cumulative	0.1537127	0.0637779	2.41	0.0160	0.0287104	0.278715
mh_ed_pre5y_cumulative	0.166392	0.0605335	2.75	0.0060	0.0477486	0.2850354
any_sui_att_pre3m	0.2960692	0.0829284	3.57	0.0000	0.1335325	0.4586059

any_sui_att_pre1y_cumulative	0.2702175	0.079422	3.4	0.0010	0.1145532	0.4258818
lvi_sui_att_pre5y_cumulative	0.2485821	0.0712528	3.49	0.0000	0.1089292	0.388235
any_inj_poi_pre3m	0.1847974	0.0523727	3.53	0.0000	0.0821488	0.2874459
any_inj_poi_pre1y_cumulative	0.138099	0.0487646	2.83	0.0050	0.0425221	0.2336758
any_inj_poi_pre5y_cumulative	0.0439858	0.0462546	0.95	0.3420	-0.0466714	0.1346431
any_sui_att_pre5y_cumulative_a	0.0260373	0.002057	12.66	0.0000	0.0220056	0.0300691
charlson_cpd	-0.0447908	0.0485725	-0.92	0.3560	-0.1399912	0.0504095
Raceasian	-0.149802	0.0690079	-2.17	0.0300	-0.285055	-0.014549
Raceblack	-0.0482917	0.1710409	-0.28	0.7780	-0.3835256	0.2869422
Raceun	-0.124487	0.0525685	-2.37	0.0180	-0.2275195	-0.0214546
census_missing	-0.1624266	0.0645285	-2.52	0.0120	-0.2889001	-0.0359532
coll_deg_lt25p	-0.0618083	0.0371018	-1.67	0.0960	-0.1345265	0.01091
phqnumber90	-0.0002945	0.0143266	-0.02	0.9840	-0.0283741	0.0277852
phqmode90_0	-0.0567475	0.0668494	-0.85	0.3960	-0.1877698	0.0742748
phqmode90_1	0.0355083	0.0809439	0.44	0.6610	-0.1231389	0.1941555
phqmode90_2	0.1007399	0.1184649	0.85	0.3950	-0.1314469	0.3329268
phqmax90_2	0.1138703	0.1116468	1.02	0.3080	-0.1049535	0.332694
phqnumber183	0.0082783	0.0105519	0.78	0.4330	-0.0124031	0.0289597
phqmax183_1	0.1329516	0.0767889	1.73	0.0830	-0.0175519	0.283455
phqmode365_2	0.0542167	0.0901175	0.6	0.5470	-0.1224102	0.2308437
phqmax365_0	-0.1682208	0.068636	-2.45	0.0140	-0.3027449	-0.0336966
phqmax365_2	0.0781856	0.0961671	0.81	0.4160	-0.1102984	0.2666696
phqmax365_3	0.4336656	0.0772601	5.61	0.0000	0.2822386	0.5850926
raceblack_de	-0.145304	0.1750764	-0.83	0.4070	-0.4884475	0.1978394
hispanic_an	-0.0950878	0.0530674	-1.79	0.0730	-0.199098	0.0089223
dep_dx_pre5y_cumulative	0.9937001	0.1064354	9.34	0.0000	0.7850907	1.20231
dep_dx_pre5y_cumulative_f	0.0124627	0.0463009	0.27	0.7880	-0.0782854	0.1032108
dep_dx_pre5y_cumulative_a	-0.0104171	0.0028933	-3.6	0.0000	-0.0160878	-0.0047464
anx_dx_pre5y_cumulative	0.079513	0.0743987	1.07	0.2850	-0.0663058	0.2253317
anx_dx_pre5y_cumulative_a	0.0047955	0.0021518	2.23	0.0260	0.000578	0.009013
bip_dx_pre5y_cumulative_a	0.0065237	0.0012021	5.43	0.0000	0.0041676	0.0088798
sch_dx_pre5y_cumulative_a	0.0007926	0.0019839	0.4	0.6900	-0.0030957	0.0046809
oth_dx_pre5y_cumulative	0.1572326	0.0543033	2.9	0.0040	0.0508	0.2636651
dem_dx_pre5y_cumulative	0.1391769	0.0841825	1.65	0.0980	-0.0258178	0.3041717
add_dx_pre5y_cumulative	-0.1002797	0.0501473	-2	0.0460	-0.1985665	-0.0019929
asd_dx_pre5y_cumulative	-0.3909997	0.1241948	-3.15	0.0020	-0.634417	-0.1475824
per_dx_pre5y_cumulative	0.2835966	0.0494359	5.74	0.0000	0.186704	0.3804893
alc_dx_pre5y_cumulative	0.3991401	0.0696063	5.73	0.0000	0.2627142	0.535566
dru_dx_pre5y_cumulative	0.4591372	0.0550148	8.35	0.0000	0.3513102	0.5669642
pts_dx_pre5y_cumulative	0.0623086	0.0489565	1.27	0.2030	-0.0336445	0.1582616
eat_dx_pre5y_cumulative	0.2768611	0.0651765	4.25	0.0000	0.1491176	0.4046046

raceasian_8	0.0128594	0.0096657	1.33	0.1830	-0.0060851	0.0318038
raceblack_8	-0.0062793	0.0092338	-0.68	0.4960	-0.0243773	0.0118186
racehp_8	-0.0197291	0.0118142	-1.67	0.0950	-0.0428845	0.0034262
racein_8	-0.0280699	0.0109976	-2.55	0.0110	-0.0496248	-0.0065149
q9_1_a	0.0066678	0.0024458	2.73	0.0060	0.0018742	0.0114614
q9_2_a	0.0086971	0.0032327	2.69	0.0070	0.0023612	0.0150331
q9_3_a	0.0128	0.0034778	3.68	0.0000	0.0059835	0.0196165
q9_1_8	0.0109181	0.0055657	1.96	0.0500	9.49E-06	0.0218268
q9_2_8	0.0202854	0.0067916	2.99	0.0030	0.0069741	0.0335968
q9_3_8	0.0288333	0.0065327	4.41	0.0000	0.0160294	0.0416372
q9_1_c	-0.0682734	0.0453817	-1.5	0.1320	-0.15722	0.0206731
q9_2_c	-0.1170131	0.0481072	-2.43	0.0150	-0.2113015	-0.0227247
q9_3_c	-0.2917472	0.0719785	-4.05	0.0000	-0.4328225	-0.1506719
q9_0_de	-0.2325519	0.0457266	-5.09	0.0000	-0.3221744	-0.1429294
any_sui_att_pre5y_cumulative_8	-0.0160737	0.0049339	-3.26	0.0010	-0.025744	-0.0064034
any_sui_att_pre5y_cumulative_c	0.0591954	0.0340745	1.74	0.0820	-0.0075894	0.1259801
any_sui_att_pre5y_cumulative_sc	0.2117987	0.13707	1.55	0.1220	-0.0568536	0.4804511
any_sui_att_pre5y_cumulative_al	-0.146646	0.1079329	-1.36	0.1740	-0.3581906	0.0648986
any_sui_att_pre5y_cumulative_dr	-0.3357564	0.0811408	-4.14	0.0000	-0.4947894	-0.1767233

APPENDIX 9C – COEFFICIENTS FOR PREDICTION OF SUICIDE ATTEMPT IN 90 DAYS FOLLOWING PRIMARY CARE VISIT WITH MENTAL HEALTH DIAGNOSIS.

	Coefficient	Std. Err.	Z score	p value	Lower 95% Conf Limit	Upper 95% Conf Limit
Constant	-6.592665	0.1053113	-62.6	0.0000	-6.799071	-6.386258
Age	-0.0177708	0.0018079	-9.83	0.0000	-0.0213143	-0.0142274
ac1	0.2800567	0.0805714	3.48	0.0010	0.1221396	0.4379738
ac3	-0.1544488	0.0427262	-3.61	0.0000	-0.2381905	-0.0707071
ac4	-0.169057	0.0643787	-2.63	0.0090	-0.295237	-0.042877
ac1f	0.7085663	0.0884772	8.01	0.0000	0.5351542	0.8819784
ac4f	-0.01017	0.0727996	-0.14	0.8890	-0.1528546	0.1325147
Medicaid	0.2015132	0.0508559	3.96	0.0000	0.1018375	0.301189
Commercial	-0.0605431	0.0399253	-1.52	0.1290	-0.1387954	0.0177091
Selffunded	0.2860064	0.0572091	5	0.0000	0.1738786	0.3981343
highdeductible	-0.1090385	0.0583723	-1.87	0.0620	-0.2234462	0.0053691
days_since_prev	-0.0003243	0.0000753	-4.31	0.0000	-0.0004719	-0.0001767
Female	-0.2056298	0.0481892	-4.27	0.0000	-0.3000788	-0.1111807
dep_dx_pre5y_noi_cumulative	-0.4051398	0.0543251	-7.46	0.0000	-0.511615	-0.2986646
dep_dx_pre5y	-0.0878258	0.0447826	-1.96	0.0500	-0.1755981	-0.0000534
anx_dx_pre5y	-0.2380795	0.0438714	-5.43	0.0000	-0.3240659	-0.152093
bip_dx_pre5y	-0.1424411	0.0702716	-2.03	0.0430	-0.2801709	-0.0047113
add_dx_pre5y	-0.1410835	0.0585855	-2.41	0.0160	-0.2559091	-0.026258
alc_dx_pre5y	-0.1626887	0.0867405	-1.88	0.0610	-0.332697	0.0073196
dru_dx_pre5y_noi_cumulative	-0.8148915	0.0774144	-10.53	0.0000	-0.9666209	-0.6631621
dru_dx_pre5y	-0.0480855	0.0634033	-0.76	0.4480	-0.1723537	0.0761828
antidep_rx_pre3m	0.1362236	0.0467613	2.91	0.0040	0.0445732	0.2278741
antidep_rx_pre1y_cumulative	0.0881055	0.0534026	1.65	0.0990	-0.0165617	0.1927727
benzo_rx_pre3m	0.340881	0.0334485	10.19	0.0000	0.2753232	0.4064388
hypno_rx_pre3m	0.1163377	0.0587128	1.98	0.0480	0.0012627	0.2314127
hypno_rx_pre5y_cumulative	0.0725226	0.0459855	1.58	0.1150	-0.0176073	0.1626525
sga_rx_pre1y_cumulative	0.1072703	0.0650683	1.65	0.0990	-0.0202611	0.2348018
sga_rx_pre5y_cumulative	0.1582301	0.0657477	2.41	0.0160	0.029367	0.2870933
mh_ip_pre3m	0.113767	0.0541248	2.1	0.0360	0.0076844	0.2198496
mh_ip_pre1y_cumulative	0.1660328	0.0620335	2.68	0.0070	0.0444494	0.2876161
mh_ip_pre5y_cumulative	0.2134675	0.0539905	3.95	0.0000	0.1076481	0.3192869
mh_op_pre3m	0.089926	0.0463842	1.94	0.0530	-0.0009854	0.1808374
mh_op_pre1y_cumulative	0.168969	0.0555262	3.04	0.0020	0.0601397	0.2777984
mh_op_pre5y_cumulative	-0.1065041	0.0533735	-2	0.0460	-0.2111142	-0.001894
mh_ed_pre3m	0.2589882	0.0459584	5.64	0.0000	0.1689114	0.349065

mh_ed_pre1y_cumulative	0.2320369	0.0501834	4.62	0.0000	0.1336793	0.3303945
mh_ed_pre5y_cumulative	0.0835463	0.0492232	1.7	0.0900	-0.0129294	0.1800221
any_sui_att_pre3m	0.4740714	0.0786359	6.03	0.0000	0.3199479	0.6281949
any_sui_att_pre1y_cumulative	0.4714488	0.0875164	5.39	0.0000	0.2999198	0.6429778
any_sui_att_pre5y_cumulative	1.668482	0.1674393	9.96	0.0000	1.340307	1.996657
lvi_sui_att_pre5y_cumulative	0.1475331	0.0699558	2.11	0.0350	0.0104223	0.2846439
any_inj_poi_pre3m	0.1329157	0.0442792	3	0.0030	0.04613	0.2197014
any_inj_poi_pre1y_cumulative	0.2464229	0.050165	4.91	0.0000	0.1481014	0.3447445
any_inj_poi_pre5y_cumulative	-0.0830589	0.0413258	-2.01	0.0440	-0.164056	-0.0020618
any_sui_att_pre5y_cumulative_a	0.0223427	0.0022036	10.14	0.0000	0.0180237	0.0266616
charlson_score	-0.0997792	0.0402998	-2.48	0.0130	-0.1787654	-0.0207929
charlson_a	0.0018103	0.0006339	2.86	0.0040	0.0005679	0.0030528
charlson_cvd	0.1381357	0.0707562	1.95	0.0510	-0.0005439	0.2768153
charlson_diab	-0.1207415	0.0524723	-2.3	0.0210	-0.2235853	-0.0178977
Raceasian	-0.1652086	0.0628224	-2.63	0.0090	-0.2883383	-0.0420789
Raceblack	-0.029999	0.1012188	-0.3	0.7670	-0.2283843	0.1683862
Hispanic	-0.3205841	0.0417471	-7.68	0.0000	-0.4024069	-0.2387614
coll_deg_lt25p	-0.0356545	0.0306191	-1.16	0.2440	-0.0956668	0.0243578
phqnumber90	0.0055312	0.0285435	0.19	0.8460	-0.050413	0.0614753
phqnumber183	0.0293979	0.0301467	0.98	0.3290	-0.0296886	0.0884843
phqnumber365	-0.0217082	0.0130881	-1.66	0.0970	-0.0473605	0.0039441
phqmode365_2	0.1220448	0.1382446	0.88	0.3770	-0.1489095	0.3929992
phqmax365_0	-0.0625263	0.0520418	-1.2	0.2300	-0.1645264	0.0394739
phqmax365_1	0.2185043	0.0671521	3.25	0.0010	0.0868887	0.35012
phqmax365_2	0.1852716	0.1315641	1.41	0.1590	-0.0725894	0.4431325
phqmax365_3	0.4865901	0.0933256	5.21	0.0000	0.3036752	0.669505
raceblack_de	-0.1041901	0.1107672	-0.94	0.3470	-0.3212899	0.1129096
raceblack_an	-0.1074305	0.0966951	-1.11	0.2670	-0.2969495	0.0820884
raceun_bi	0.1497073	0.122312	1.22	0.2210	-0.0900198	0.3894343
hispanic_bi	0.1359814	0.0927678	1.47	0.1430	-0.0458402	0.317803
dep_dx_pre5y_cumulative	1.718887	0.0891928	19.27	0.0000	1.544073	1.893702
dep_dx_pre5y_cumulative_a	-0.0119109	0.0018765	-6.35	0.0000	-0.0155888	-0.0082331
anx_dx_pre5y_cumulative	0.3794353	0.0849776	4.47	0.0000	0.2128823	0.5459883
anx_dx_pre5y_cumulative_a	0.0013635	0.0016891	0.81	0.4200	-0.0019471	0.004674
bip_dx_pre5y_cumulative	0.1141705	0.1228579	0.93	0.3530	-0.1266266	0.3549677
bip_dx_pre5y_cumulative_f	0.1409446	0.0742368	1.9	0.0580	-0.0045568	0.2864461
bip_dx_pre5y_cumulative_a	0.005867	0.0023362	2.51	0.0120	0.0012882	0.0104458
sch_dx_pre5y_cumulative_a	-0.0005691	0.001835	-0.31	0.7560	-0.0041657	0.0030275
oth_dx_pre5y_cumulative	0.2136741	0.0516036	4.14	0.0000	0.1125329	0.3148152
dem_dx_pre5y_cumulative	0.0835573	0.0590086	1.42	0.1570	-0.0320974	0.199212
per_dx_pre5y_cumulative	0.443662	0.0811095	5.47	0.0000	0.2846903	0.6026336

alc_dx_pre5y_cumulative	0.5796565	0.0866115	6.69	0.0000	0.4099011	0.7494119
dru_dx_pre5y_cumulative	1.295697	0.060946	21.26	0.0000	1.176245	1.415149
pts_dx_pre5y_cumulative	0.1123629	0.0480509	2.34	0.0190	0.0181848	0.2065409
eat_dx_pre5y_cumulative	0.2631496	0.0678675	3.88	0.0000	0.1301317	0.3961675
tbi_dx_pre5y_cumulative	0.1512429	0.0608175	2.49	0.0130	0.0320428	0.270443
phq8_index_score_calc_f	-0.0022386	0.0049678	-0.45	0.6520	-0.0119753	0.007498
raceasian_8	0.0202408	0.0096584	2.1	0.0360	0.0013107	0.0391709
racein_8	0.0063296	0.014912	0.42	0.6710	-0.0228974	0.0355566
hispanic_8	0.0069394	0.0082141	0.84	0.3980	-0.0091598	0.0230387
age_8	0.0004031	0.0001301	3.1	0.0020	0.0001481	0.000658
q9_0_a	0.0049376	0.002259	2.19	0.0290	0.0005101	0.0093651
q9_1_8	0.0141446	0.0065539	2.16	0.0310	0.0012992	0.02699
q9_2_8	0.0296125	0.007246	4.09	0.0000	0.0154105	0.0438145
q9_3_8	0.0542913	0.006972	7.79	0.0000	0.0406264	0.0679562
q9_1_c	0.0594748	0.0616585	0.96	0.3350	-0.0613736	0.1803232
q9_2_c	-0.0316618	0.0777477	-0.41	0.6840	-0.1840444	0.1207208
q9_3_c	-0.218713	0.1072406	-2.04	0.0410	-0.4289007	-0.0085252
q9_0_de	-0.5715746	0.1047819	-5.45	0.0000	-0.7769434	-0.3662058
any_sui_att_pre5y_cumulative_8	-0.0159464	0.0068935	-2.31	0.0210	-0.0294574	-0.0024353
any_sui_att_pre5y_cumulative_c	-0.0143564	0.0237277	-0.61	0.5450	-0.0608618	0.0321491
any_sui_att_pre5y_cumulative_de	-0.995897	0.1283282	-7.76	0.0000	-1.247416	-0.7443784
any_sui_att_pre5y_cumulative_an	-0.4112843	0.0839873	-4.9	0.0000	-0.5758965	-0.2466722
any_sui_att_pre5y_cumulative_bi	-0.2070626	0.0861377	-2.4	0.0160	-0.3758894	-0.0382357
any_sui_att_pre5y_cumulative_sc	0.3432375	0.1314316	2.61	0.0090	0.0856363	0.6008386
any_sui_att_pre5y_cumulative_al	-0.2630062	0.0997112	-2.64	0.0080	-0.4584365	-0.0675759
any_sui_att_pre5y_cumulative_dr	-0.4859498	0.086566	-5.61	0.0000	-0.655616	-0.3162836
any_sui_att_pre5y_cumulative_pe	-0.1867706	0.1032793	-1.81	0.0710	-0.3891943	0.0156531

APPENDIX 9D – COEFFICIENTS FOR PREDICTION OF SUICIDE DEATH IN 90 DAYS FOLLOWING MENTAL HEALTH SPECIALTY VISIT.

	Coefficient	Std. Err.	Z score	p value	Lower 95% Conf Limit	Upper 95% Conf Limit
Constant	-8.946025	0.2293034	-39.01	0.0000	-9.395451	-8.496598
ac1	-1.545886	0.3886519	-3.98	0.0000	-2.30763	-0.7841423
Medicare	-0.5708209	0.1987973	-2.87	0.0040	-0.9604565	-0.1811853
days_since_prev	-0.0005089	0.0005031	-1.01	0.3120	-0.0014949	0.0004771
Female	-0.7158009	0.284572	-2.52	0.0120	-1.273552	-0.1580499
dep_dx_pre5y	-0.3935343	0.1772138	-2.22	0.0260	-0.740867	-0.0462016
anx_dx_pre5y	-0.5247922	0.2006081	-2.62	0.0090	-0.9179769	-0.1316075
antidep_rx_pre3m	0.0776264	0.2050601	0.38	0.7050	-0.3242841	0.4795369
benzo_rx_pre3m	0.6995959	0.1704775	4.1	0.0000	0.365466	1.033726
hypno_rx_pre1y_cumulative	0.467845	0.1990773	2.35	0.0190	0.0776606	0.8580295
sga_rx_pre5y_cumulative	0.4699488	0.1881668	2.5	0.0130	0.1011487	0.8387489
mh_ip_pre3m	0.2892493	0.2534952	1.14	0.2540	-0.2075922	0.7860909
mh_ip_pre1y_cumulative	0.180343	0.2969324	0.61	0.5440	-0.4016338	0.7623198
mh_ip_pre5y_cumulative	0.4432957	0.2762229	1.6	0.1090	-0.0980912	0.9846826
mh_ed_pre3m	0.4700143	0.2319554	2.03	0.0430	0.01539	0.9246386
mh_ed_pre1y_cumulative	0.3527572	0.2072697	1.7	0.0890	-0.053484	0.7589984
any_sui_att_pre1y_cumulative	1.36854	0.4539192	3.01	0.0030	0.4788743	2.258205
any_sui_att_pre5y_cumulative_a	-0.0000514	0.0110178	0	0.9960	-0.021646	0.0215432
charlson_a	-0.0005351	0.0011149	-0.48	0.6310	-0.0027202	0.00165
Raceblack	-1.465944	0.3898385	-3.76	0.0000	-2.230013	-0.7018742
Raceun	0.6011625	0.474392	1.27	0.2050	-0.3286287	1.530954
Hispanic	-1.362098	0.2994398	-4.55	0.0000	-1.948989	-0.7752066
raceun_f	0.7672085	0.426566	1.8	0.0720	-0.0688454	1.603262
raceun_de	0.6380826	0.4739421	1.35	0.1780	-0.2908269	1.566992
dep_dx_pre5y_cumulative_a	0.0111731	0.0058094	1.92	0.0540	-0.000213	0.0225592
anx_dx_pre5y_cumulative_a	0.0064072	0.0043074	1.49	0.1370	-0.0020351	0.0148496
bip_dx_pre5y_cumulative_a	0.0042201	0.0042588	0.99	0.3220	-0.0041269	0.0125671
sch_dx_pre5y_cumulative_a	-0.0112257	0.0053196	-2.11	0.0350	-0.0216519	-0.0007995
alc_dx_pre5y_cumulative	0.1592071	0.2320504	0.69	0.4930	-0.2956033	0.6140175
phq8_missing_f	-0.5062722	0.308586	-1.64	0.1010	-1.11109	0.0985452
raceasian_8	0.0241234	0.0310524	0.78	0.4370	-0.0367382	0.084985
raceblack_8	-0.0776751	0.0670778	-1.16	0.2470	-0.2091453	0.0537951
racein_8	-0.1020686	0.0656522	-1.55	0.1200	-0.2307445	0.0266073
raceun_8	-0.0564359	0.0324313	-1.74	0.0820	-0.12	0.0071283
age_8	0.000565	0.0004832	1.17	0.2420	-0.000382	0.001512

q9_0_a	-0.0047322	0.0050601	-0.94	0.3500	-0.0146497	0.0051854
q9_1_a	0.0125815	0.0075659	1.66	0.0960	-0.0022473	0.0274104
q9_2_a	0.0079878	0.0098744	0.81	0.4190	-0.0113658	0.0273413
q9_3_a	0.0035114	0.0144209	0.24	0.8080	-0.024753	0.0317759
q9_0_8	-0.0365011	0.0255099	-1.43	0.1520	-0.0864995	0.0134973
q9_3_8	0.0551443	0.0386544	1.43	0.1540	-0.0206169	0.1309055
q9_3_c	-0.1787875	0.1812216	-0.99	0.3240	-0.5339753	0.1764002
any_sui_att_pre5y_cumulative_8	-0.0343006	0.0251448	-1.36	0.1730	-0.0835836	0.0149824
any_sui_att_pre5y_cumulative_c	0.0103636	0.2293594	0.05	0.9640	-0.4391726	0.4598998

APPENDIX 9E – SELECTED PREDICTORS AND COEFFICIENTS FOR PREDICTION OF SUICIDE DEATH IN 90 DAYS FOLLOWING PRIMARY CARE VISIT WITH MENTAL HEALTH DIAGNOSIS.

	Coefficient	Std. Err.	Z score	p value	Lower 95% Conf Limit	Upper 95% Conf Limit
Constant	-9.160812	0.118435	-77.35	0.0000	-9.392941	-8.928684
Medicare	-0.4024572	0.1726079	-2.33	0.0200	-0.7407626	-0.0641519
days_since_prev	-0.001533	0.000458	-3.35	0.0010	-0.0024306	-0.0006354
Female	-1.452239	0.1277421	-11.37	0.0000	-1.702609	-1.201869
benzo_rx_pre3m	0.5385625	0.1728869	3.12	0.0020	0.1997104	0.8774145
mh_ip_pre3m	0.2818673	0.206991	1.36	0.1730	-0.1238276	0.6875623
mh_ip_pre1y_cumulative	0.3160587	0.191463	1.65	0.0990	-0.0592019	0.6913192
mh_ed_pre3m	0.6988312	0.2272503	3.08	0.0020	0.2534287	1.144234
mh_ed_pre1y_cumulative	0.0190551	0.2236506	0.09	0.9320	-0.419292	0.4574021
any_inj_poi_pre1y_cumulative	0.2420071	0.2263733	1.07	0.2850	-0.2016764	0.6856906
any_sui_att_pre5y_cumulative_a	0.0240631	0.0050371	4.78	0.0000	0.0141906	0.0339356
charlson_score	-0.0602928	0.038337	-1.57	0.1160	-0.1354319	0.0148464
Hispanic	-1.842608	0.359839	-5.12	0.0000	-2.54788	-1.137337
phqnumber90	0.0022517	0.0535383	0.04	0.9660	-0.1026815	0.1071849
raceun_de	0.8959889	0.2779327	3.22	0.0010	0.3512507	1.440727
raceun_an	0.8135118	0.3997291	2.04	0.0420	0.0300571	1.596966
dep_dx_pre5y_cumulative	0.497053	0.2942677	1.69	0.0910	-0.079701	1.073807
dep_dx_pre5y_cumulative_a	0.0072638	0.0055019	1.32	0.1870	-0.0035198	0.0180473
anx_dx_pre5y_cumulative	0.1735233	0.1362331	1.27	0.2030	-0.0934886	0.4405352
bip_dx_pre5y_cumulative_a	0.0103087	0.0045761	2.25	0.0240	0.0013398	0.0192776
alc_dx_pre5y_cumulative	0.5644535	0.3186114	1.77	0.0760	-0.0600135	1.18892
raceasian_8	0.0354654	0.0291877	1.22	0.2240	-0.0217414	0.0926722
racemuot_8	0.0782259	0.0378627	2.07	0.0390	0.0040165	0.1524354
age_8	0.0005279	0.0003053	1.73	0.0840	-0.0000706	0.0011263
q9_2_a	0.0166789	0.0090063	1.85	0.0640	-0.0009731	0.034331
q9_3_a	0.0254827	0.0137783	1.85	0.0640	-0.0015223	0.0524877
q9_1_8	0.0455625	0.0183142	2.49	0.0130	0.0096672	0.0814577
q9_3_8	0.0163483	0.0390113	0.42	0.6750	-0.0601123	0.092809
any_sui_att_pre5y_cumulative_8	-0.0314048	0.032474	-0.97	0.3340	-0.0950528	0.0322431
any_sui_att_pre5y_cumulative_c	-0.0499144	0.128846	-0.39	0.6980	-0.3024479	0.2026191