Model Summary for Milestone Ratings vs. Medicare Outcomes

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Contents

Description

This document uses the end-year milestone evaluations at the last year of residency from ACGME. Milestone rating for each resident is the mean of all questions.

Whole Data Description

Table 1: Medicare Outcomes Description

n_case	1105.00
n_surgeon	338.00
n_hosp	340.00
POA_severe_complication_rate	0.12
severe_complication_rate	0.15
POA_any_complication_rate	0.25
any_complication_rate	0.33
death_rate	0.09
readmit	0.33
reop	0.10

Table1 for model variables

	Overall (N=1105)
IntResponseValue_mean	

	Overall (N=1105)
Mean (SD)	8.431 (0.706)
Range	4.812 - 9.000
flg_male	
Female	632 (57.2%)
Male	473 (42.8%)
age_at_admit	
Mean (SD)	75.833 (7.529)
Range	65.000 - 99.000
factor(e_race_wbho_lable)	
Hispanic	12 (1.1%)
Non-Hispanic Black	82 (7.4%)
Non-Hispanic White	978 (88.5%)
Other	33 (3.0%)
AHRQ_score	
Mean (SD)	10.738 (12.327)
Range	-12.000 - 64.000
ses_2grp	
N-Miss	9
bot 2 quint	373 (34.0%)
top 3 quint	723 (66.0%)
colectomy_type	
lap	468 (42.4%)
open	637 (57.6%)
factor(facility_clm_yr)	
2007	1 (0.1%)
2008	2 (0.2%)
2009	1 (0.1%)
2010	2 (0.2%)
2011	3 (0.3%)
2013	4 (0.4%)
2014	3 (0.3%)
2015	184 (16.7%)
2016	905 (81.9%)
factor(flg_multi_surgeon)	
0	437 (39.5%)
1	668 (60.5%)
factor(flg_assistant_surgeon)	
0	671 (60.7%)
1	434 (39.3%)
hosp_beds_2grp	
N-Miss	8
<350	696 (63.4%)
>=350	401 (36.6%)
medicaid/inpatient days ratio	
N-Miss	8
Mean (SD)	0.203 (0.112)
Range	0.000 - 0.640
Registered nurse to bed ratios	
N-Miss	8
Mean (SD)	2.063 (0.801)
Range	0.300 - 5.260
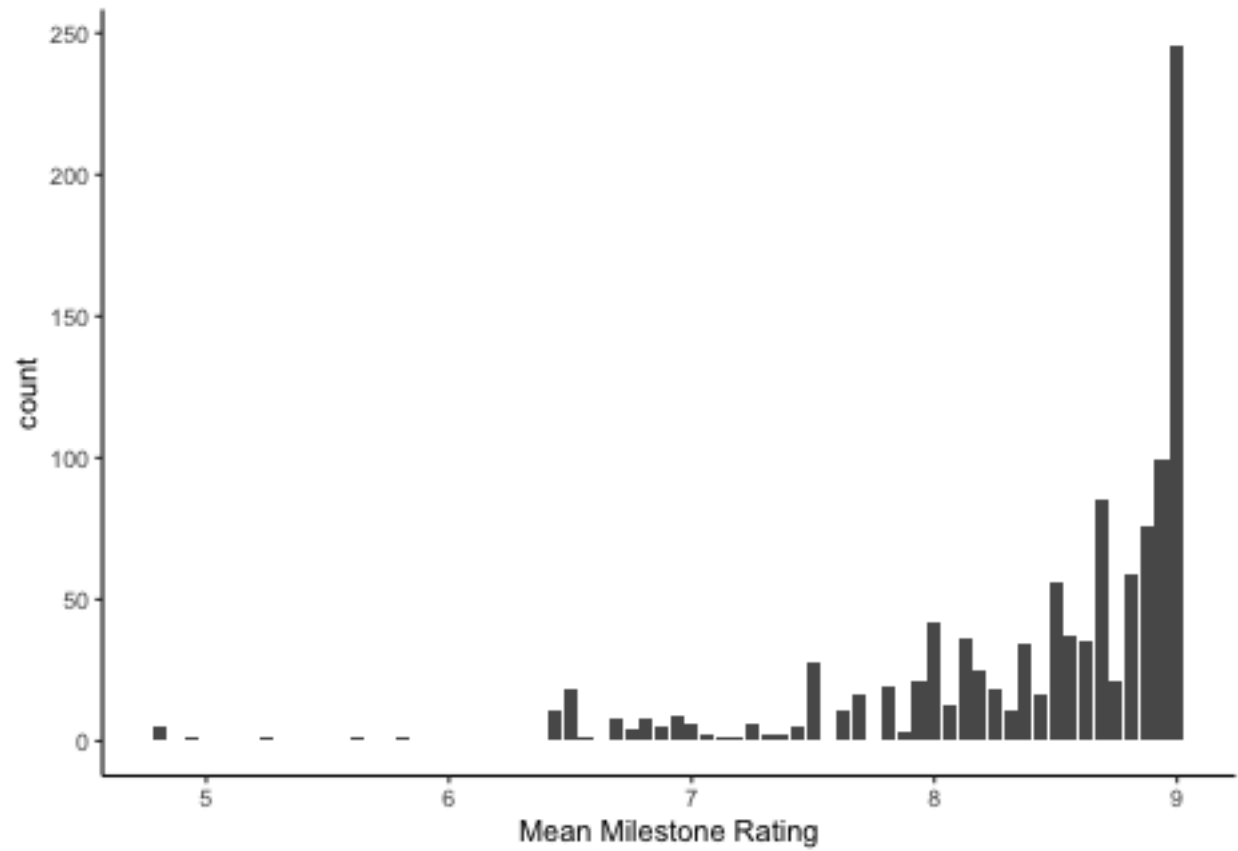
Variable	N	Mean	SD	Min	Q1	Median	Q3	Max	Missing
IntResponseValue_mean	1105	8.4	0.7	4.8	8.1	8.7	8.9	9	0

Severe Complication (Excluded POA)

term	OR	OR_lower	OR_upper	Estimate	p_value	lower_2.5	upper_97.5
Intercept	0.05	0.00	1.31	-3.08	0.07	-6.42	0.27
Milestone Rating							
IntResponseValue_mean	0.93	0.70	1.23	-0.08	0.60	-0.36	0.21
Patient							
flg_male	1.17	0.77	1.78	0.16	0.45	-0.26	0.58
age_at_admit	0.90	0.74	1.10	-0.11	0.30	-0.31	0.09
race_white	0.97	0.45	2.07	-0.03	0.94	-0.79	0.73
race_hisp_other	1.09	0.29	4.13	0.08	0.90	-1.25	1.42
flg_admit_emerg	3.46	1.96	6.11	1.24	0.00	0.67	1.81
AHRQ_score	1.82	1.51	2.19	0.60	0.00	0.41	0.78
ses_2grp	0.70	0.45	1.09	-0.36	0.11	-0.80	0.08
Case							
facility_clm_yr	1.02	0.80	1.31	0.02	0.86	-0.22	0.27
flg_multi_surgeon	1.12	0.67	1.87	0.11	0.67	-0.40	0.62
flg_assistant_surgeon	1.27	0.73	2.22	0.24	0.39	-0.31	0.80
Hospital							
hosp_beds_2grp	1.32	0.84	2.06	0.28	0.22	-0.17	0.72
val_hosp_mcday2inptday_ratio	1.13	0.15	8.57	0.12	0.90	-1.90	2.15
val_hosp_rn2bed_ratio	1.16	0.89	1.51	0.15	0.28	-0.12	0.41

group	effect	variance	sd	var_prop
id_physician_npi	Intercept	0.00	0.00	0.00
facility_prvnumgrp	Intercept	0.03	0.16	0.08
cpt_cd	Intercept	0.28	0.53	0.92

Predicted probabilities of flg_cmp_po_severe_poa
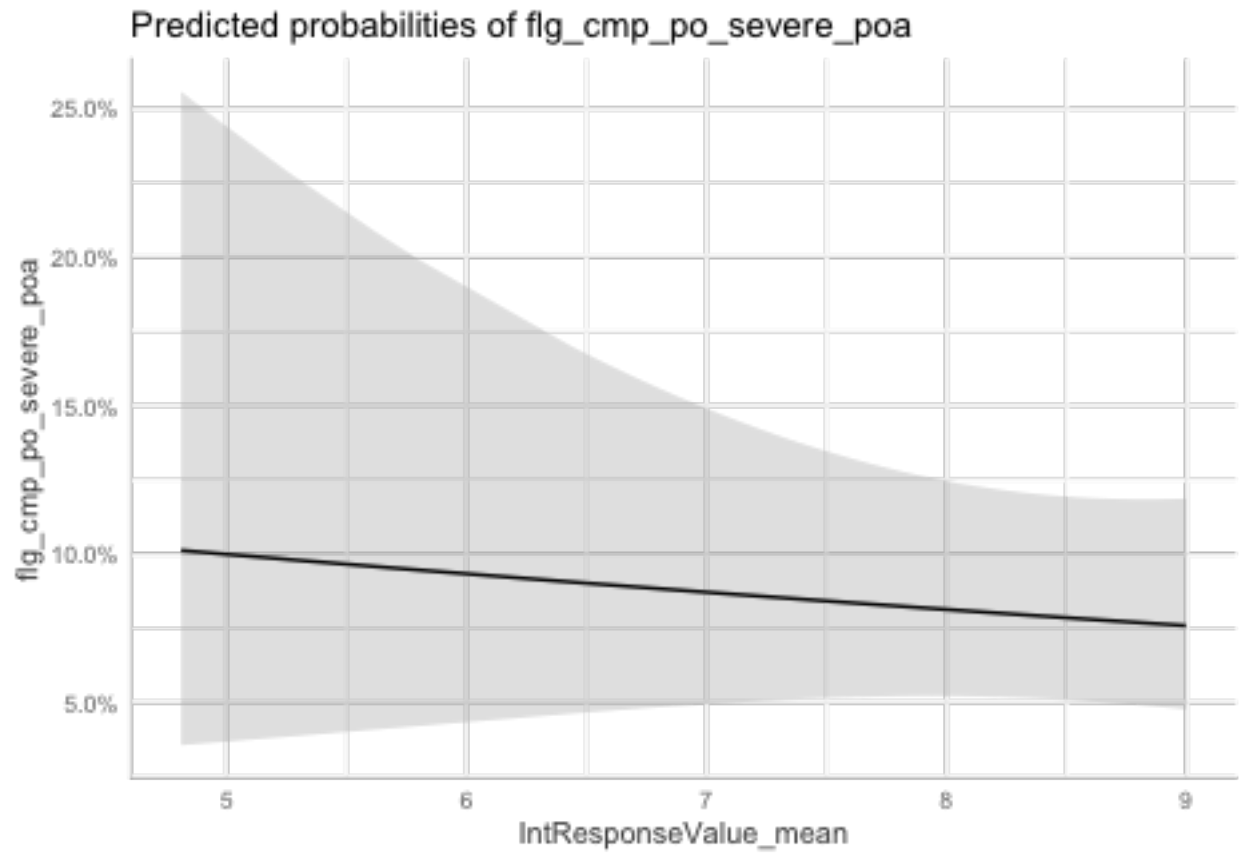
quart	milestone_rating	predicted	conf.low	conf.high
min	4.81	0.10	0.04	0.26
Q1	8.12	0.08	0.05	0.12
median	8.69	0.08	0.05	0.12
Q3	8.94	0.08	0.05	0.12
max	9.00	0.08	0.05	0.12

Any Complication (Exclude POA)

term	OR	OR_lower	OR_upper	Estimate	p_value	lower_2.5	upper_97.5
Intercept	0.12	0.01	2.23	-2.13	0.16	-5.05	0.80
Milestone Rating							
IntResponseValue_mean	0.97	0.77	1.22	-0.03	0.77	-0.26	0.20
Patient							
flg_male	1.02	0.73	1.40	0.02	0.93	-0.31	0.34
age_at_admit	0.93	0.80	1.09	-0.07	0.37	-0.23	0.08
race_white	0.63	0.35	1.15	-0.46	0.13	-1.05	0.14
race_hisp_other	0.66	0.24	1.85	-0.41	0.43	-1.44	0.61
flg_admit_emerg	2.05	1.38	3.06	0.72	0.00	0.32	1.12
AHRQ_score	2.01	1.73	2.35	0.70	0.00	0.55	0.85
ses_2grp	1.03	0.73	1.45	0.03	0.88	-0.32	0.37
Case							
facility_clm_yr	1.19	0.93	1.52	0.17	0.17	-0.07	0.42
flg_multi_surgeon	0.66	0.44	1.00	-0.41	0.05	-0.81	0.00
flg_assistant_surgeon	1.18	0.76	1.84	0.17	0.45	-0.27	0.61
Hospital							
hosp_beds_2grp	0.95	0.67	1.36	-0.05	0.79	-0.40	0.31
val_hosp_mcday2inptday_ratio	0.80	0.17	3.76	-0.22	0.78	-1.76	1.32
val_hosp_rn2bed_ratio	0.90	0.72	1.12	-0.10	0.35	-0.32	0.12

group	effect	variance	sd	var_prop
id_physician_npi	Intercept	0.11	0.33	0.48
facility_prvnumgrp	Intercept	0.00	0.00	0.00
cpt_cd	Intercept	0.12	0.35	0.52

Predicted probabilities of flg_cmp_po_any_poa
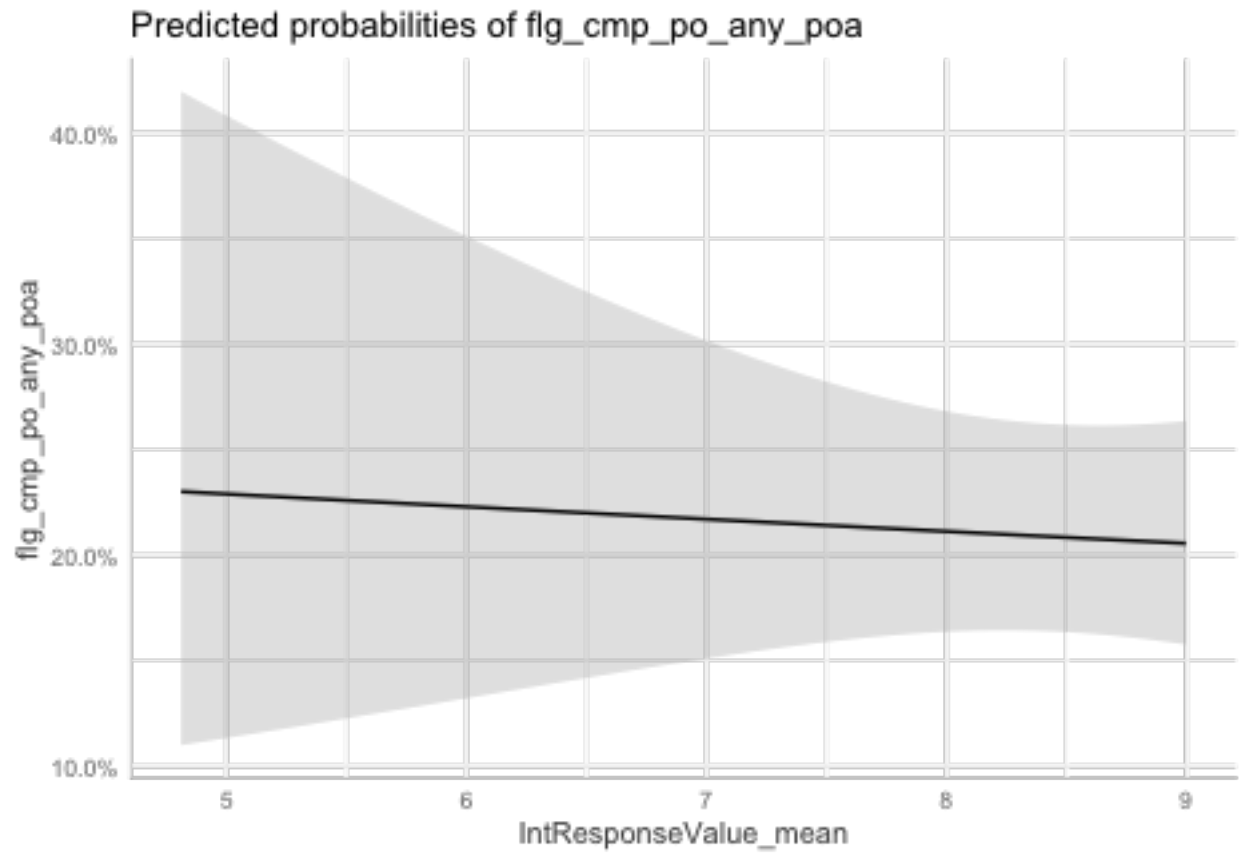
quart	milestone_rating	predicted	conf.low	conf.high
min	4.81	0.23	0.11	0.42
Q1	8.12	0.21	0.16	0.27
median	8.69	0.21	0.16	0.26
Q3	8.94	0.21	0.16	0.26
max	9.00	0.21	0.16	0.26

Readmit 30 days

term	OR	OR_lower	OR_upper	Estimate	p_value	lower_2.5	upper_97.5
Intercept	1.45	0.13	16.44	0.38	0.76	-2.05	2.80
Milestone Rating							
IntResponseValue_mean	0.94	0.77	1.15	-0.06	0.56	-0.26	0.14
Patient							
flg_male	1.00	0.75	1.32	0.00	0.98	-0.29	0.28
age_at_admit	1.40	1.22	1.60	0.33	0.00	0.20	0.47
race_white	1.00	0.57	1.73	0.00	0.99	-0.56	0.55
race_hisp_other	0.76	0.30	1.93	-0.27	0.57	-1.19	0.66
flg_admit_emerg	2.03	1.44	2.85	0.71	0.00	0.37	1.05
AHRQ_score	1.15	1.01	1.31	0.14	0.03	0.01	0.27
ses_2grp	0.93	0.69	1.25	-0.07	0.63	-0.37	0.22
Case							
facility_clm_yr	0.87	0.72	1.05	-0.14	0.14	-0.32	0.04
flg_multi_surgeon	1.54	1.08	2.19	0.43	0.02	0.07	0.78
flg_assistant_surgeon	0.64	0.45	0.93	-0.44	0.02	-0.81	-0.07
Hospital							
hosp_beds_2grp	0.75	0.55	1.02	-0.29	0.07	-0.60	0.02
val_hosp_mcday2inptday_ratio	5.92	1.61	21.82	1.78	0.01	0.48	3.08
val_hosp_rn2bed_ratio	1.02	0.85	1.22	0.02	0.86	-0.17	0.20

group	effect	variance	sd	var_prop
id_physician_npi	Intercept	0.04	0.21	0.24
facility_prvnumgrp	Intercept	0.00	0.00	0.00
cpt_cd	Intercept	0.14	0.37	0.76

Predicted probabilities of flg_readmit_30d

quart	milestone_rating	predicted	conf.low	conf.high
min	4.81	0.38	0.22	0.57
Q1	8.12	0.33	0.27	0.40
median	8.69	0.33	0.27	0.39
Q3	8.94	0.32	0.26	0.39
max	9.00	0.32	0.26	0.39
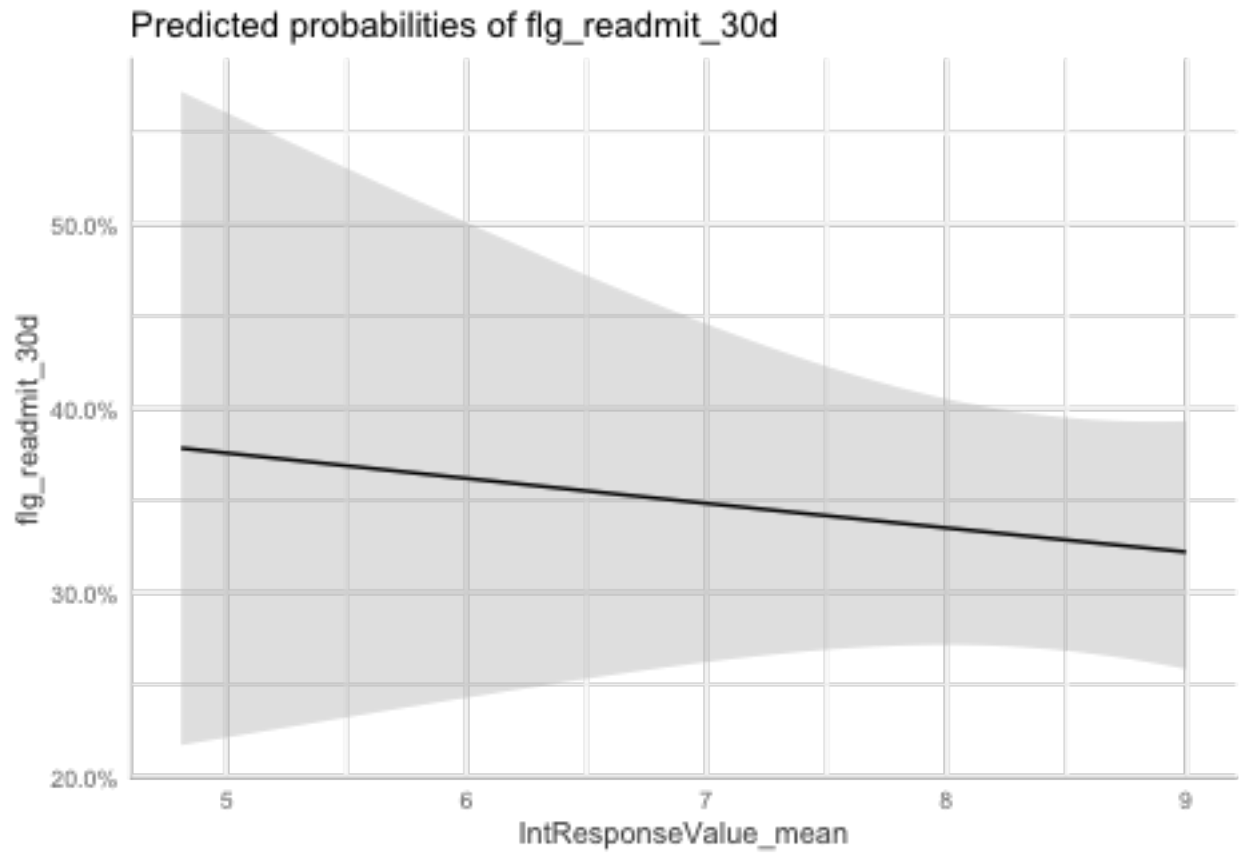
Death 30 days

term	OR	OR_lower	OR_upper	Estimate	p_value	lower_2.5	upper_97.5
Intercept	0.05	0.00	2.43	-3.04	0.13	-6.96	0.89
Milestone Rating							
IntResponseValue_mean	1.10	0.75	1.59	0.09	0.63	-0.28	0.46
Patient							
flg_male	0.94	0.57	1.56	-0.06	0.81	-0.57	0.44
age_at_admit	1.69	1.33	2.14	0.52	0.00	0.28	0.76
race_white	0.63	0.26	1.50	-0.47	0.29	-1.34	0.40
race_hisp_other	0.52	0.08	3.27	-0.65	0.49	-2.49	1.18
flg_admit_emerg	3.12	1.55	6.30	1.14	0.00	0.44	1.84
AHRQ_score	2.10	1.67	2.64	0.74	0.00	0.51	0.97
ses_2grp	1.18	0.69	2.01	0.17	0.54	-0.36	0.70
Case							
facility_clm_yr	0.97	0.74	1.25	-0.03	0.80	-0.30	0.23
flg_multi_surgeon	0.51	0.28	0.96	-0.66	0.04	-1.29	-0.04
flg_assistant_surgeon	1.29	0.64	2.61	0.26	0.48	-0.45	0.96
Hospital							
hosp_beds_2grp	1.09	0.64	1.86	0.08	0.76	-0.45	0.62
val_hosp_mcday2inptday_ratio	0.18	0.01	2.36	-1.70	0.19	-4.26	0.86
val_hosp_rn2bed_ratio	0.75	0.52	1.08	-0.28	0.12	-0.64	0.08

group	effect	variance	sd	var_prop
id_physician_npi	Intercept	0.13	0.36	0.29
facility_prvnumgrp	Intercept	0.00	0.00	0.00
cpt_cd	Intercept	0.32	0.56	0.71

Predicted probabilities of flg_death_30d
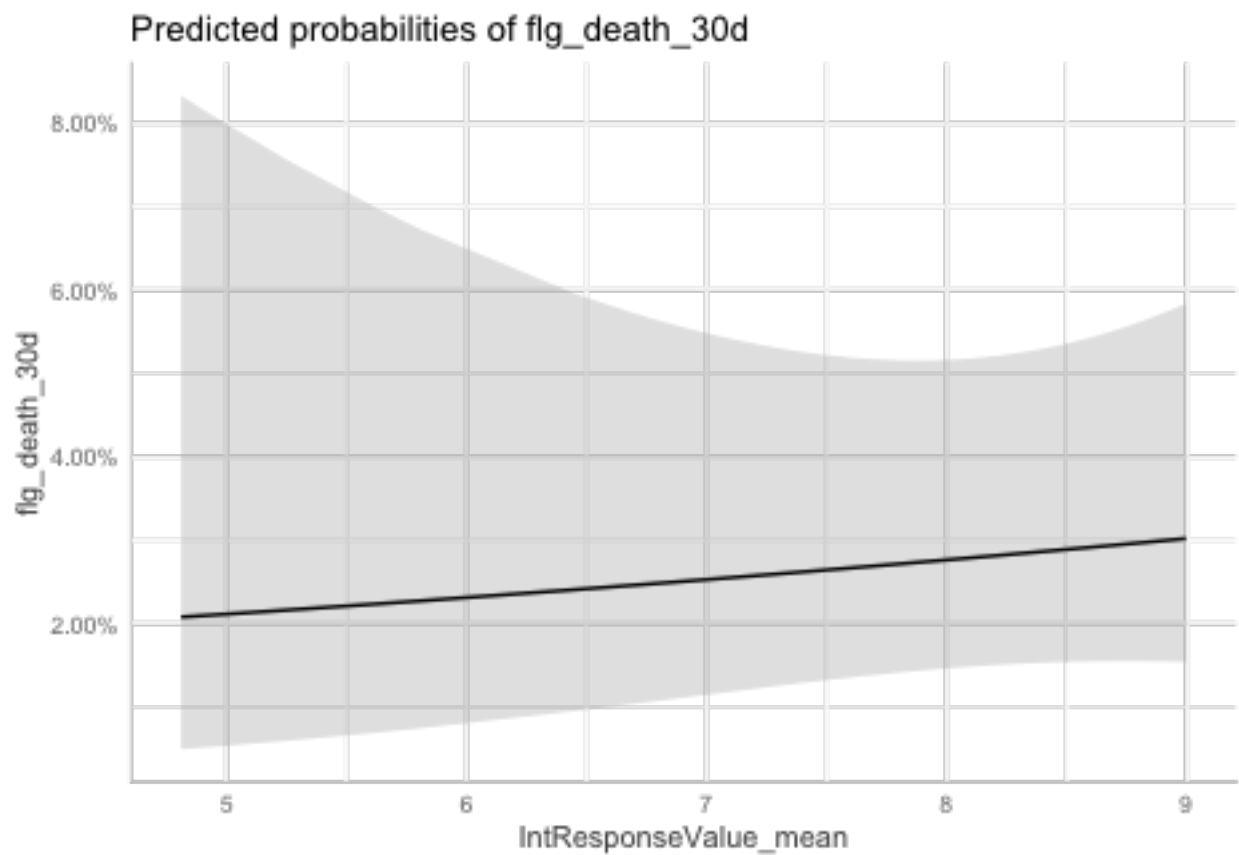
quart	milestone_rating	predicted	conf.low	conf.high
min	4.81	0.02	0.00	0.08
Q1	8.12	0.03	0.01	0.05
median	8.69	0.03	0.02	0.06
Q3	8.94	0.03	0.02	0.06
max	9.00	0.03	0.02	0.06

Reoperation

term	OR	OR_lower	OR_upper	Estimate	p_value	lower_2.5	upper_97.5
Intercept	0.00	0.00	0.22	-6.57	0.01	-11.64	-1.49
Milestone Rating							
IntResponseValue_mean	1.25	0.90	1.72	0.22	0.18	-0.10	0.54
Patient							
flg_male	1.17	0.78	1.76	0.16	0.45	-0.25	0.56
age_at_admit	0.98	0.80	1.20	-0.02	0.84	-0.22	0.18
race_white	0.53	0.27	1.05	-0.64	0.07	-1.31	0.04
race_hisp_other	0.49	0.14	1.68	-0.72	0.26	-1.95	0.52
flg_admit_emerg	0.91	0.58	1.45	-0.09	0.70	-0.55	0.37
AHRQ_score	1.14	0.95	1.37	0.13	0.17	-0.06	0.31
ses_2grp	0.91	0.60	1.40	-0.09	0.68	-0.51	0.34
Case							
facility_clm_yr	1.40	0.87	2.25	0.34	0.16	-0.13	0.81
flg_multi_surgeon	1.06	0.64	1.76	0.06	0.81	-0.45	0.57
flg_assistant_surgeon	0.77	0.45	1.32	-0.26	0.35	-0.79	0.28
Hospital							
hosp_beds_2grp	0.90	0.58	1.39	-0.11	0.62	-0.54	0.33
val_hosp_mcday2inptday_ratio	1.22	0.19	7.68	0.20	0.84	-1.65	2.04
val_hosp_rn2bed_ratio	1.07	0.84	1.38	0.07	0.57	-0.18	0.32

group	effect	variance	sd	var_prop
id_physician_npi	Intercept	0.00	0.00	0
facility_prvnumgrp	Intercept	0.00	0.00	0
cpt_cd	Intercept	0.01	0.08	1

Predicted probabilities of flg_util_reop
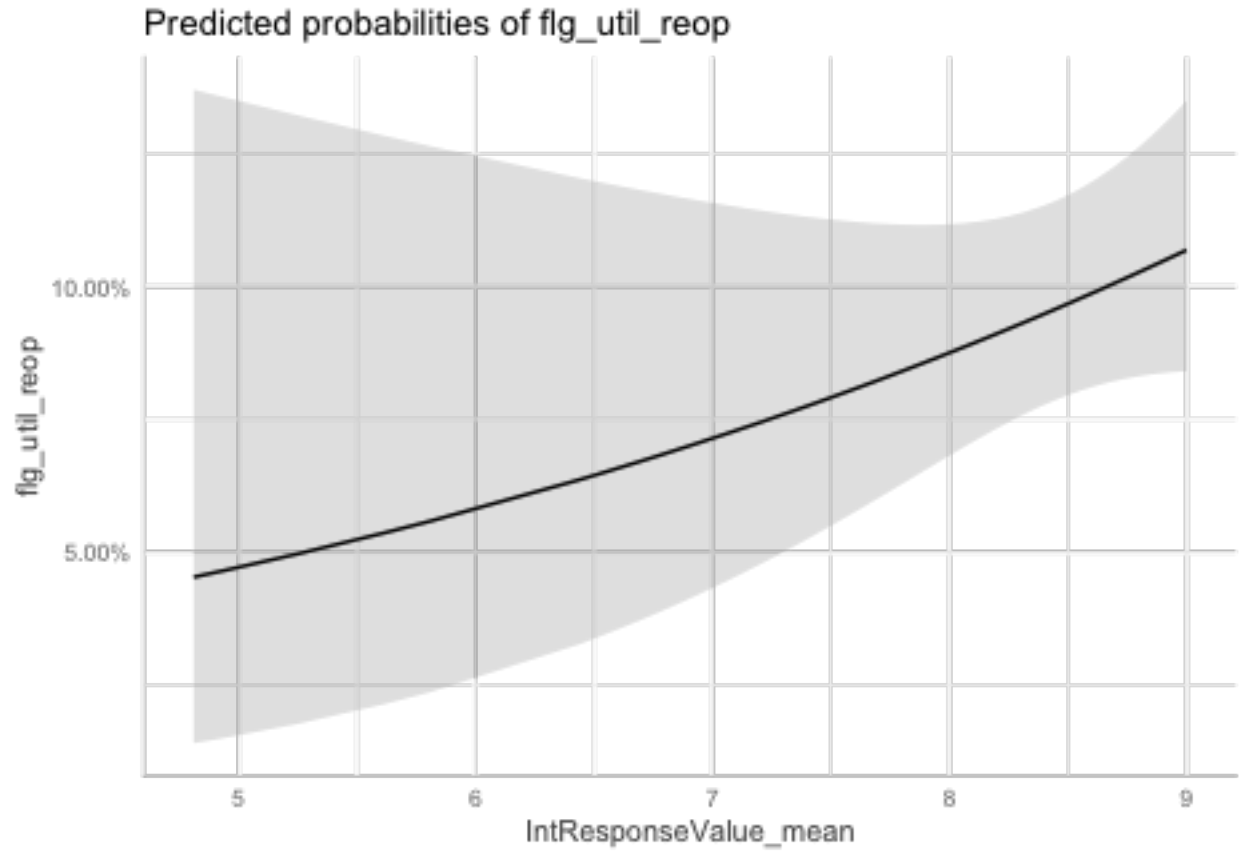
quart	milestone_rating	predicted	conf.low	conf.high
min	4.81	0.05	0.01	0.14
Q1	8.12	0.09	0.07	0.11
median	8.69	0.10	0.08	0.12
Q3	8.94	0.11	0.08	0.13
max	9.00	0.11	0.08	0.14

Any Complication Exclude Death

term	OR	OR_lower	OR_upper	Estimate	p_value	lower_2.5	upper_97.5
Intercept	3.22	0.16	65.50	1.17	0.45	-1.84	4.18
Milestone Rating							
IntResponseValue_mean	1.09	0.88	1.34	0.08	0.45	-0.13	0.30
Patient							
flg_male	0.86	0.64	1.16	-0.15	0.33	-0.44	0.15
age_at_admit	1.33	1.14	1.55	0.28	0.00	0.13	0.44
race_white	0.71	0.39	1.31	-0.34	0.27	-0.95	0.27
race_hisp_other	1.13	0.45	2.83	0.12	0.80	-0.80	1.04
flg_admit_emerg	2.28	1.61	3.23	0.83	0.00	0.48	1.17
AHRQ_score	1.73	1.48	2.03	0.55	0.00	0.39	0.71
ses_2grp	0.81	0.59	1.11	-0.21	0.18	-0.53	0.10
Case							
facility_clm_yr	0.86	0.66	1.13	-0.15	0.28	-0.41	0.12
flg_multi_surgeon	0.94	0.63	1.38	-0.07	0.74	-0.46	0.32
flg_assistant_surgeon	0.82	0.55	1.21	-0.20	0.31	-0.60	0.19
Hospital							
hosp_beds_2grp	0.80	0.58	1.10	-0.23	0.17	-0.55	0.10
val_hosp_mcday2inptday_ratio	1.85	0.49	7.04	0.61	0.37	-0.72	1.95
val_hosp_rn2bed_ratio	1.00	0.83	1.20	0.00	0.99	-0.19	0.18

group	effect	variance	sd	var_prop
id_physician_npi	Intercept	0.03	0.16	0.08
facility_prvnumgrp	Intercept	0.00	0.00	0.00
cpt_cd	Intercept	0.30	0.55	0.92

Predicted probabilities of flg_any_but_death
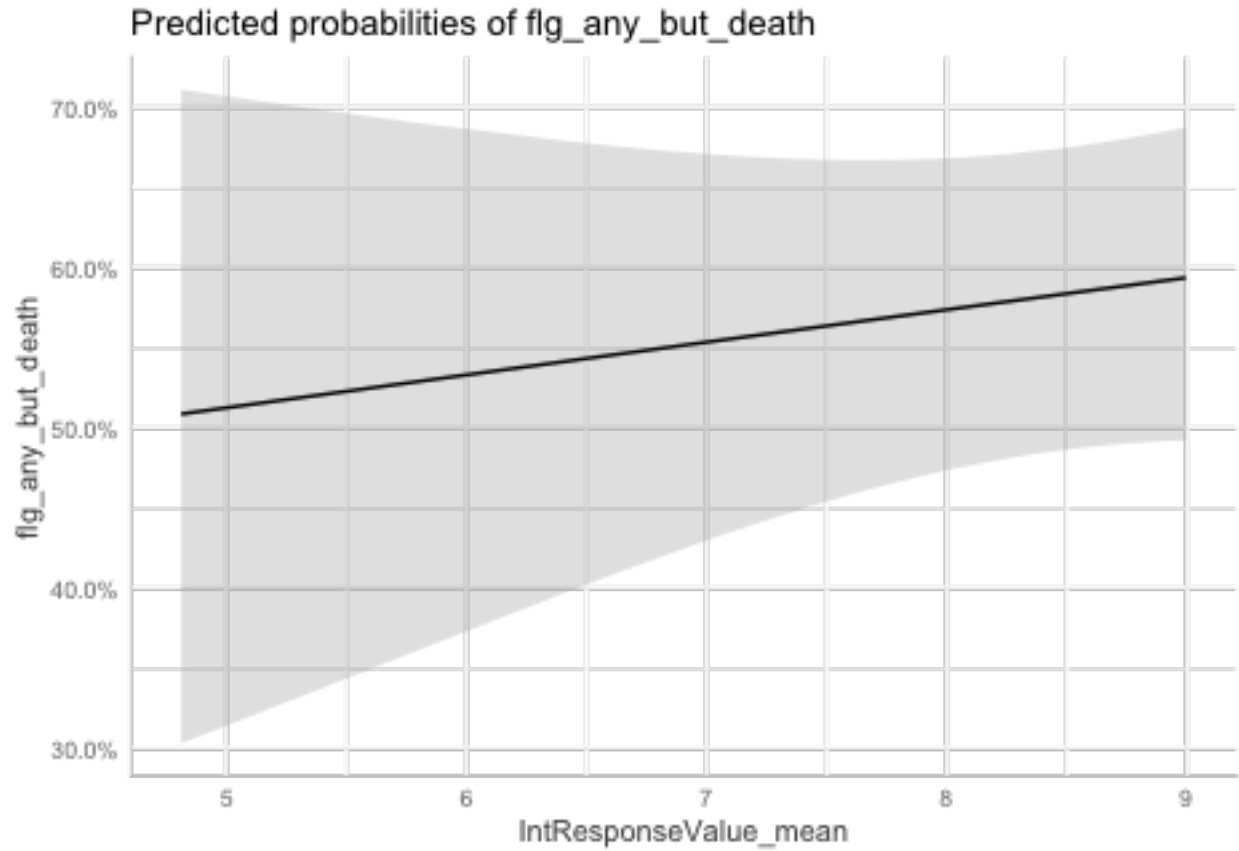
quart	milestone_rating	predicted	conf.low	conf.high
min	4.81	0.51	0.30	0.71
Q1	8.12	0.58	0.48	0.67
median	8.69	0.59	0.49	0.68
Q3	8.94	0.59	0.49	0.69
max	9.00	0.59	0.49	0.69