QA_death_rate

QA the mortality rate in milestone medicare outcomes

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1. Compare descriptive stats among different cohorts

Cohort Description

- Milestone Medicare

  - 2015-2017 medicare cases by milestone graduates from 2015-2017 within 24 months after graduation
  - Partial Colectomy

- ECV

  - 2006 - 2016 medicare cases by general surgery surgeons within 35 years of practice
  - Partial Colectomy

- Medicare 2007-2016

  - Medicare 5 procedures from 2007 to 2016 standardized using SAS

- Medicare 2007-2017

  - Medicare 5 procedures from 2007 to 2017 standardized using R

Descriptive Stats

compare descriptive stats among different datasets

	milestone	ecv	medicare06__16	medicare06__17
n__case	2368	551782	1335171	1545680
n__surgeon	520	14571	37988	40310
n__hosp	507	4129	5275	5479
n__patient	2320	470267	919084	1071443
POA__severe__cmp__rate	14%	10%	12%	12%
death__rate	10%	8%	8%	8%
readmit__rate	33%	30%	30%	30%
reop__rate	4%	4%	5%	3%

2. Compare with ECV predicted probabilities of 30-days mortality

I think the 4% mortality rate Brian was referring to for the ECV project was from the predicted probabilities as below. The full report can be found at **repo**.

Years Experience	predicted	conf.low	conf.high
1	0.040	0.038	0.042
5	0.039	0.037	0.041
10	0.038	0.036	0.039
15	0.037	0.035	0.038

4% predicted probabilities were based on model and assumed fixed values for each covariate. It's different from the observed mortality rate.

To get predicted death probability of an *Average Patient*, all the covariates values are fixed at average values. For Categorical variables, it's fixed at the reference level. So the predicted probabilities can vary. For example, if the the emergency admission status was fixed at elective surgery, the predicted probability would be lower than observed rate.

3. Reasons why mortality rates are so high in medicare

Just some thoughts of why mortality rates are high in our medicare cohort

- Medicare >65 yr
- 30-days mortality is not defined by procedures at all. So the death can be totally unrelated to the procedure.
- The medicare claim files we used are inpatient MedPAR. So all the patients in medicare analytic file had inpatient stays. So their conditions are usually more severe.

4. overlap between complication and death using medicare year 06-17, 5 procedures

flg_death_30d	flg_cmp_po_severe	N	% of Total	% of flg_death_30d
0	0	1242808	80.41	87.21
0	1	182319	11.80	12.79
1	0	64702	4.19	53.67
1	1	55851	3.61	46.33

flg_death_30d	flg_cmp_po_any	N	% of Total	% of flg_death_30d
0	0	1072487	69.39	75.26
0	1	352640	22.81	24.74
1	0	23119	1.50	19.18
1	1	97434	6.30	80.82