# Milestones and Medicare Outcome Descriptives

## 2021-03-10

## Contents

Milestones vs Medicare outcomes cohort details

- Medicare cases: inpatient from 2015-2017
- Milestone graduates: 2015-2017
- Procedure: Partial Colectomy
- Practice months after graduation: 24 months

## 1. Cohort Description

**Overall Cohort**

| | |
|---|---|
| n_case | 1508 |
| n_surgeon | 433 |
| n_hosp | 440 |
| n_patient | 1498 |
| POA_severe_complication_rate | 17% |
| POA_any_complication_rate | 30% |
| death_rate | 12% |
| readmit_rate | 37% |
| reop_rate | 5% |

**Case level characteristics**

| Characteristic | N = 1,508 |
|---|---|
| flg_male | 635 (42%) |
| age_at_admit | 77 (8)[70, 82] |
| race_white | 1,341 (89%) |
| AHRQ_score | 14 (12)[4, 21] |
| flg_admit_emerg | 920 (61%) |
| had_assist_surg | 498 (33%) |

| Characteristic | N = 1,508 |
|---|---|
| cases_per_12month | 3.83 (2.53)[2.12, 4.94] |
| colectomy_type | |
| lap | 483 (32%) |
| open | 1,025 (68%) |
| hosp_beds | |
| <350 | 993 (66%) |
| >=350 | 507 (34%) |
| val_hosp_mcday2inptday_ratio | 0.20 (0.10)[0.14, 0.24] |
| val_hosp_rn2bed_ratio | 2.06 (0.73)[1.60, 2.44] |

- val_hosp_mcday2inptday_ratio: Total facility medicaid days/total facility inpatient days ratio
- val_hosp_rn2bed_ratio: Registered nurse to bed ratios
- for continuous variables, the stats are *mean (sd)[p25, p75]*

## 2. Milestone ratings

### 2.1 Overall mean

**Descriptive table**

| Characteristic | **Overall**, N = 1,508 | **mean<8**, N = 261 | **mean>=8**, N = 1,247 | **p-value** |
|---|---|---|---|---|
| flg_male | 635 (42%) | 109 (42%) | 526 (42%) | 0.96 |
| age_at_admit | 77 (8) | 77 (8) | 77 (8) | 0.89 |
| race_white | 1,341 (89%) | 223 (85%) | 1,118 (90%) | 0.062 |
| AHRQ_score | 14 (12) | 14 (11) | 13 (13) | 0.070 |
| emergent_admission | 920 (61%) | 166 (64%) | 754 (61%) | 0.37 |
| had_assist_surg | 498 (33%) | 73 (28%) | 425 (34%) | 0.066 |
| colectomy_type | | | | 0.18 |
| lap | 483 (32%) | 74 (28%) | 409 (33%) | |
| open | 1,025 (68%) | 187 (72%) | 838 (67%) | |
| hosp_beds | | | | <0.001 |
| <350 | 993 (66%) | 204 (78%) | 789 (64%) | |
| >=350 | 507 (34%) | 56 (22%) | 451 (36%) | |
| hosp_mcday2inptday | 0.20 (0.10) | 0.20 (0.09) | 0.20 (0.10) | 0.53 |
| hosp_rn2bed | 2.06 (0.73) | 2.16 (0.93) | 2.04 (0.68) | 0.95 |

**Mean Colectomy volume/year (SD)**

| n_surgeon | mean_cole_volume_per_yr | sd_cole_volume_per_yr |
|---|---|---|
| 433 | 2.59 | 1.91 |

| Overall_rating | n_surgeon | mean_cole_volume_per_yr | sd_cole_volume_per_yr |
|---|---|---|---|
| mean<8 | 84 | 2.11 | 1.53 |
| mean>=8 | 349 | 2.70 | 1.97 |

## 2.2 Professional ratings

**Descriptive table**

| **Characteristic** | **Overall**, N = 1,508 | **mean<8**, N = 252 | **mean>=8**, N = 1,25 |
|---|---|---|---|
| flg_male | 635 (42%) | 107 (42%) | 528 (42%) |
| age_at_admit | 77 (8) | 77 (8) | 77 (8) |
| race_white | 1,341 (89%) | 216 (86%) | 1,125 (90%) |
| AHRQ_score | 14 (12) | 15 (12) | 13 (12) |
| emergent_admission | 920 (61%) | 162 (65%) | 758 (61%) |
| had_assist_surg | 498 (33%) | 85 (34%) | 413 (33%) |
| colectomy_type | | | |
| lap | 483 (32%) | 72 (29%) | 411 (33%) |
| open | 1,025 (68%) | 180 (71%) | 845 (67%) |
| hosp_beds | | | |
| <350 | 993 (66%) | 199 (79%) | 794 (64%) |
| >=350 | 507 (34%) | 52 (21%) | 455 (36%) |
| hosp_mcday2inptday | 0.20 (0.10) | 0.20 (0.09) | 0.20 (0.10) |
| hosp_rn2bed | 2.06 (0.73) | 2.15 (0.88) | 2.04 (0.69) |

## 2.3 Operative ratings

**Descriptive table**

| **Characteristic** | **Overall**, N = 1,508 | **mean<8**, N = 240 | **mean>=8**, N = 1,26 |
|---|---|---|---|
| flg_male | 635 (42%) | 96 (40%) | 539 (43%) |
| age_at_admit | 77 (8) | 77 (8) | 77 (8) |
| race_white | 1,341 (89%) | 204 (85%) | 1,137 (90%) |
| AHRQ_score | 14 (12) | 14 (11) | 13 (13) |
| emergent_admission | 920 (61%) | 157 (66%) | 763 (61%) |
| had_assist_surg | 498 (33%) | 75 (31%) | 423 (33%) |
| colectomy_type | | | |
| lap | 483 (32%) | 60 (25%) | 423 (33%) |
| open | 1,025 (68%) | 180 (75%) | 845 (67%) |
| hosp_beds | | | |
| <350 | 993 (66%) | 181 (76%) | 812 (64%) |
| >=350 | 507 (34%) | 58 (24%) | 449 (36%) |
| hosp_mcday2inptday | 0.20 (0.10) | 0.20 (0.09) | 0.20 (0.10) |
| hosp_rn2bed | 2.06 (0.73) | 2.12 (0.92) | 2.05 (0.69) |

## 2.4 Leadership ratings

**Descriptive table**

| **Characteristic** | **Overall**, N = 1,508 | **mean<8**, N = 194 | **mean>=8**, N = 1,31 |
|---|---|---|---|
| flg_male | 635 (42%) | 85 (44%) | 550 (42%) |
| age_at_admit | 77 (8) | 77 (8) | 77 (8) |
| race_white | 1,341 (89%) | 170 (88%) | 1,171 (89%) |
| AHRQ_score | 14 (12) | 14 (11) | 14 (13) |
| emergent_admission | 920 (61%) | 124 (65%) | 796 (61%) |
| had_assist_surg | 498 (33%) | 50 (26%) | 448 (34%) |
| colectomy_type | | | |
| lap | 483 (32%) | 56 (29%) | 427 (32%) |
| open | 1,025 (68%) | 138 (71%) | 887 (68%) |
| hosp_beds | | | |
| <350 | 993 (66%) | 159 (82%) | 834 (64%) |
| >=350 | 507 (34%) | 34 (18%) | 473 (36%) |
| hosp_mcday2inptday | 0.20 (0.10) | 0.20 (0.10) | 0.20 (0.10) |
| hosp_rn2bed | 2.06 (0.73) | 2.19 (0.97) | 2.04 (0.68) |

## 2.5 Assistant surgeon cases and hospital size across ratings

**Descriptive table**  Summary table to look across 4 different milestone ratings by if *had_assist_surgeon* and *hospital bed size*.

| **overall_mean** | **Overall**, N = 1,508 | **mean<8**, N = 261 | **mean>=8**, N = 1,247 | **p-value** |
|---|---|---|---|---|
| had_assist_surg | 498 (33) | 73 (28) | 425 (34) | 0.066 |
| hosp_beds | | | | <0.001 |
| <350 | 993 (66) | 204 (78) | 789 (64) | |
| >=350 | 507 (34) | 56 (22) | 451 (36) | |

| **Professional** | **Overall**, N = 1,508 | **mean<8**, N = 252 | **mean>=8**, N = 1,256 | **p-value** |
|---|---|---|---|---|
| had_assist_surg | 498 (33) | 85 (34) | 413 (33) | 0.85 |
| hosp_beds | | | | <0.001 |
| <350 | 993 (66) | 199 (79) | 794 (64) | |
| >=350 | 507 (34) | 52 (21) | 455 (36) | |

| **Operative** | **Overall**, N = 1,508 | **mean<8**, N = 240 | **mean>=8**, N = 1,268 | **p-value** |
|---|---|---|---|---|
| had_assist_surg | 498 (33) | 75 (31) | 423 (33) | 0.57 |
| hosp_beds | | | | <0.001 |
| <350 | 993 (66) | 181 (76) | 812 (64) | |
| >=350 | 507 (34) | 58 (24) | 449 (36) | |

| **Leadership** | **Overall**, N = 1,508 | **mean<8**, N = 194 | **mean>=8**, N = 1,314 | **p-value** |
|---|---|---|---|---|
| had_assist_surg | 498 (33) | 50 (26) | 448 (34) | 0.027 |
| hosp_beds | | | | <0.001 |
| <350 | 993 (66) | 159 (82) | 834 (64) | |
| >=350 | 507 (34) | 34 (18) | 473 (36) | |