Maryland Hospitals' Quality-Based Reimbursement Project – Further Analyses of the Opportunity Model

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Maryland Quality Measures

Clinical Measures
1. AMI -1 Aspirin at arrival
2. AMI- 2 Aspirin prescribed at discharge *****TOPPED OFF ******
3. AMI- 3 Angiotensin converting enzyme inhibitors (ACEI) or angiotensin receptor blockers (ARB) for left ventricular systolic dysfunction (LVSD)
4. AMI- 4 Adult smoking cessation advice/counseling ****** TOPPED OFF ***
5. AMI- 5 Beta blocker prescribed at discharge ******* TOPPED OFF *******
6. AMI– 6 Beta blocker at arrival
7. PN -2 Pneumococcal vaccination
8. PN- 3a Blood cultures performed within 24 hours prior to or 24 hours after hospital arrival for patients who were transferred or admitted to the ICU within 24 hours of hospital arrival
9. PN -3b Blood culture before first antibiotic – Pneumonia (Questions remain on this measure.)
10. PN- 4 Adult smoking cessation advice/counseling ****** TOPPED OFF *****
11. PN- 5b Pneumonia patients who receive their first dose of antibiotics within 8 hours after arrival in the hospital
12. PN- 7 Influenza vaccination
13. HF- 1 Discharge instructions
14. HF- 2 Left ventricular systolic function (LVSF) assessment
15. HF- 3 ACEI or ARB for LVSD
16. HF- 4 Adult smoking cessation advice/counseling ****** TOPPED OFF *****
17. SIP- 1 Prophylactic antibiotic received within one hour prior to surgical incision (by surgery type for 8 procedures.)
18. SIP- 2 Prophylactic antibiotic selection for surgical patients (by surgery type for 8 procedures.) (There were some questions about including this complex measure.)
19. SIP -3 Prophylactic antibiotics discontinued within 24 hours after surgery end time (48 hours for CABG) (by surgery type for 8 procedures.

Use of Topped Off Measures

- **Three reasons for retaining Topped off measures**
  - To prevent back sliding
  - To provide incentive to a few low-scoring hospitals to improve
  - To provide a few easier measures that all hospitals can look good on

Implications of using Topped Off Measures

- Present method of scoring topped off measures leads to the following:
  - ☐ 84% of topped off measures resulted in 10 points (110 out of 131 topped off measures)
  - ☐ 10% of topped off measures resulted in less than 8 points (12 out of 131 topped off)
  - ☐ Hospitals are disadvantaged when not able to report topped off measures

Adjustment for Hospitals not reporting topped off measures

- Primary reason for not reporting topped off measure was the requirement of at least 10 patients
  - if such topped off measures had been scored, 31 of 45 measures would have resulted in 10 points
  - average score would have been 9.35 points
- Two possible adjustments for disadvantaged
  - award hospitals 9.35 points for each unreported topped off measure
  - drop requirement of at least 10 patients for topped off measures

Modeling Performance Score based on number of measures and peer group

The GLM Procedure

Dependent Variable: score_adj

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	0.10742921	0.02148584	1.62	0.1789
Error	38	0.50482046	0.01328475		
Corrected Total	43	0.61224966			

R-Square	Coeff Var	Root MSE	score_adj Mean
0.175466	22.14493	0.115259	0.520478

Source	DF	Type I SS	Mean Square	F Value	Pr > F
count_adj	1	0.00230966	0.00230966	0.17	0.6791
peer	4	0.10511954	0.02627989	1.98	0.1175

Source	DF	Type III SS	Mean Square	F Value	Pr > F
count_adj	1	0.00495590	0.00495590	0.37	0.5450
peer	4	0.10511954	0.02627989	1.98	0.1175

Parameter		Estimate	Standard Error	t Value	Pr > |t|
Intercept		0.3413712128 B	0.30295845	1.13	0.2669
count_adj		0.0096334827	0.01577244	0.61	0.5450
peer	1	-.0316278608 B	0.09192000	-0.34	0.7327
peer	2	0.0126542386 B	0.08738935	0.14	0.8856
peer	3	0.0252738145 B	0.09188526	0.28	0.7848
peer	4	0.1686135631 B	0.12023712	1.40	0.1689
peer	5	0.0000000000 B	.	.	.

base on 2005 and 2006 Maryland QIO

Quality Measure Exclusions

- Quality measures are recorded on a subset of patients at each hospital after exclusions
- Exclusions are for important reasons
  - ☐ Transfers out
  - ☐ non-applicability (e.g., counseling a non-smoker)
  - ☐ medically not advised (e.g., potential for bleeding with aspirin)
- **Exclusion justification** is subject to audit
  - ☐ Samples of discharges are used

Distributions in 2006 Exclusion Percentages - by Quality Measure

Obs	QM	n	mean	10th pct	25th pct	50th pct	75th pct	80th pct	90th pct
1	AMI-1	45	0.44	0.21	0.30	0.40	0.58	0.60	0.79
2	AMI-2	45	0.58	0.17	0.45	0.62	0.78	0.80	0.85
3	AMI-3	45	0.88	0.78	0.83	0.89	0.94	0.95	0.98
4	AMI-4	45	0.87	0.67	0.81	0.90	0.95	0.96	0.96
5	AMI-5	45	0.55	0.17	0.45	0.61	0.72	0.76	0.80
6	AMI-6	45	0.51	0.28	0.40	0.47	0.66	0.68	0.79
7	PN-2	45	0.59	0.41	0.51	0.59	0.67	0.70	0.74
8	PN-3a	45	0.90	0.86	0.88	0.91	0.94	0.94	0.95
9	PN-3b	45	0.44	0.30	0.36	0.45	0.52	0.53	0.57
10	PN-4	45	0.82	0.70	0.81	0.83	0.88	0.89	0.91
11	PN-5b	45	0.38	0.25	0.32	0.37	0.44	0.45	0.54
12	PN-7	45	0.86	0.82	0.85	0.86	0.88	0.89	0.91
13	HF-1	45	0.30	0.21	0.25	0.30	0.34	0.35	0.39
14	HF-2	45	0.12	0.07	0.09	0.10	0.15	0.16	0.20
15	HF-3	45	0.67	0.57	0.62	0.69	0.74	0.76	0.77
16	HF-4	45	0.84	0.74	0.81	0.86	0.90	0.91	0.91
17	SIP-1	45	0.14	0.07	0.08	0.11	0.16	0.17	0.26
18	SIP-2	45	0.14	0.06	0.08	0.11	0.15	0.17	0.26
19	SIP-3	45	0.17	0.08	0.10	0.14	0.19	0.24	0.30

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