



**All Payer Hospital System Modernization
Performance Measurement Work Group**

May 18, 2016

9:30 am to 12:00 pm

Health Services Cost Review Commission, Conference Room 100

4160 Patterson Avenue, Baltimore, MD 21215

Meeting Agenda

- I. Welcome and Introductions
- II. GBR Infrastructure Reporting
- III. External presentation on a MHAC/PPC analysis by Megan Rutkai of South River High School
- IV. Readmission Reduction Incentive Program
- V. Potentially Avoidable Utilization (PAU) Savings
- VI. Aggregate At Risk Revenue Draft FY 2018 Policy
- VII. Performance Measurement Future Strategy
- VIII. Other Updates

Evaluation of *Potentially Preventable Hospital-Acquired Infection* Rates in Maryland Hospitals

BY MEGAN RUTKAI

Maryland Hospital-Acquired Conditions Initiative (MHAC)

- Assesses 46 Maryland hospitals based on rates of “Potentially Preventable Conditions” (PPCs)
 - “Harmful events or negative outcomes that may result from the process of care and treatment rather than from a natural progression of underlying disease”
- Hospitals report the number of cases of PPCs experienced each quarter
- MHAC has a scoring system to score and rank hospitals based on performance
- Observed/Expected Ratio accounts for differences in hospital size, demographics
- MHAC “Percent At Risk Scaling” is used to determine a “good,” “bad,” or “average” score
- Hospitals can be financially penalized or rewarded for their scores

PPC Classifications

- 65 types of PPCs
- PPCs are arranged into 8 Groups
 - **Group 1: Extreme Complications**
 - *Shock (9)*
 - *Cardiac Arrest (14)*
 - **Group 2: Cardiovascular-Respiratory Complications**
 - *Pneumonia (5)*
 - *Acute Myocardial Infarction (11)*
 - **Group 3: Gastrointestinal Complications**
 - *Major Liver Complications (19)*
 - *Major Gastrointestinal Complications with Transfusion or Significant Bleeding (18)*
 - **Group 4: Perioperative Complications**
 - *Post-Procedure Foreign Bodies (45)*
 - *Reopening Surgical Site (39)*
 - **Group 5: Infection Complications**
 - *Urinary Tract Infection without Catheter (65)*
 - *Clostridium difficile Colitis (21)*
 - **Group 6: Malfunctions, Reactions, etc.**
 - *Iatrogenic Pneumothorax (49)*
 - *Central Venous Catheter-Related Blood Stream Infection (54)*
 - **Group 7: Obstetrical Complications**
 - *Obstetrical Hemorrhage without Transfusion (55)*
 - *Delivery with Placental Complications (62)*
 - **Group 8: Other Medical and Surgical Complications**
 - *Other In-Hospital Adverse Events (64)*
 - *Other Surgical Complication – Moderate (44)*

My Research

- MHAC databases are used to identify the rates of the 6 PPCs in Group 5 (“Infectious Complications”)
 - “Potentially Preventable Hospital-Acquired Infections” – PPHAls
 - **Clostridium difficile Colitis (PPC 21)**
 - **Cellulitis (PPC 33)**
 - **Moderate Infections (PPC 34)**
 - **Septicemia & Severe Infections (PPC 35)**
 - **Urinary Tract Infection without Catheter (PPC 65)**
 - **Catheter-Related Urinary Tract Infection (PPC 66)**
- Data from the 6 PPHAls is isolated
- MHAC Scoring Methodology is used to generate “PPHAI Scores” for 28 hospitals
 - Only hospitals which reported data for all 6 PPHAls are included
- Each hospital’s “PPHAI Score” is compared to its “MHAC Score”

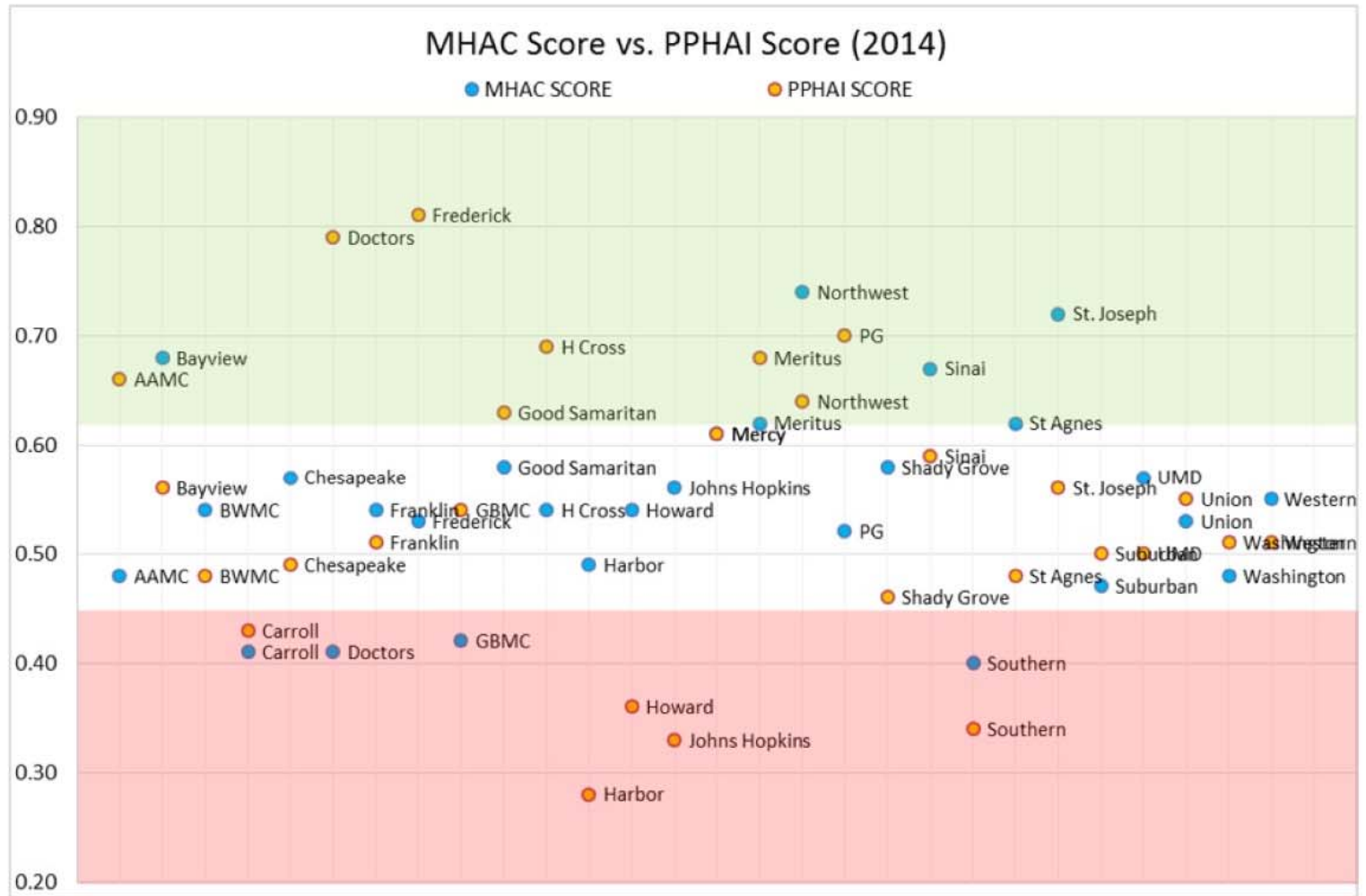
Findings

MHAC Scores are representative of PPHAI Scores in few cases.

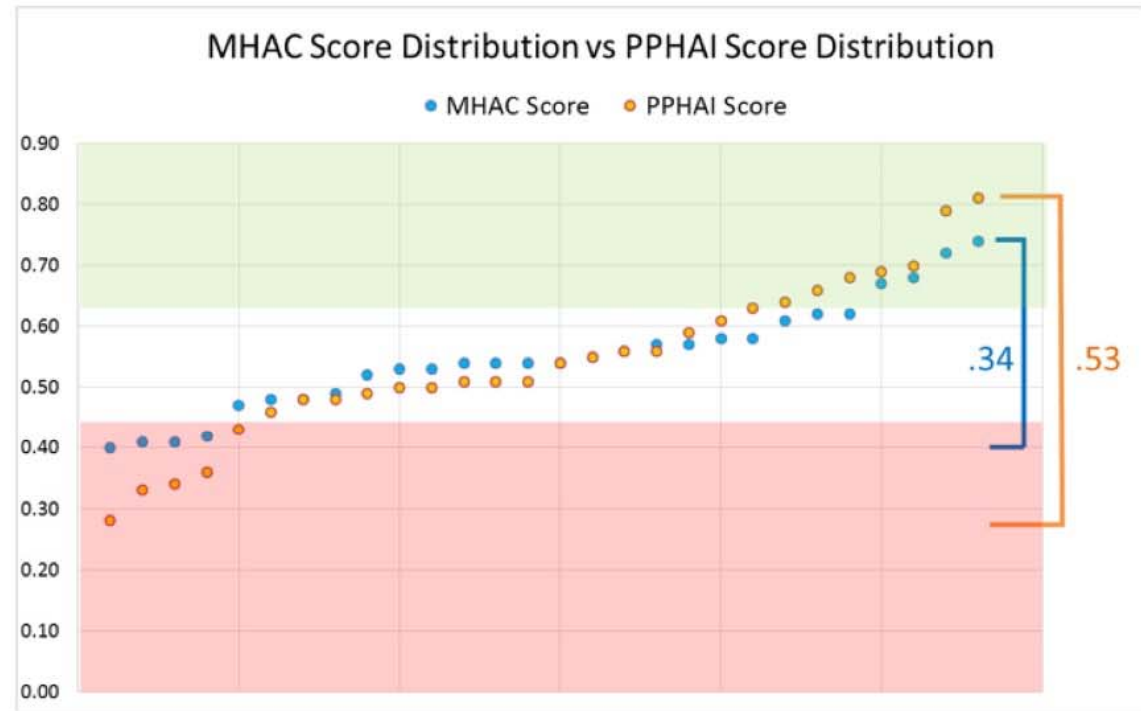
- 20 hospitals have considerable score differences
 - Over 70% of hospitals
- Average difference of .11
- 12 hospitals have higher PPHAI Scores than MHAC Scores (Including AAMC)
- 15 hospitals have lower PPHAI Scores than MHAC Scores
- 1 hospital received the same score (Mercy)
- Doctors Community has one of the lowest MHAC Scores and one of the highest PPHAI Scores, with a difference of .38
 - Larger than the entire spread of MHAC Scores (.34)

MHAC Score and PPHAI Score Comparison (2014)			
Hospital	MHAC Score	PPHAI Score	Difference
Frederick Memorial	0.53	0.81	0.28
Doctors Community	0.41	0.79	0.38
Prince George	0.52	0.70	0.18
Holy Cross	0.54	0.69	0.15
Meritus	0.62	0.68	0.06
AAMC	0.48	0.66	0.18
Northwest	0.74	0.64	-0.10
Good Samaritan	0.58	0.63	0.05
Mercy	0.61	0.61	0.00
Sinai	0.67	0.59	-0.08
UM St Joseph	0.72	0.56	-0.14
Hopkins Bayview	0.68	0.56	-0.12
Union Memorial	0.53	0.55	0.02
GBMC	0.42	0.54	0.12
Western MD	0.55	0.51	-0.04
Franklin Square	0.54	0.51	-0.03
Washington Adventist	0.48	0.51	0.03
University of Maryland	0.57	0.50	-0.07
Suburban	0.47	0.50	0.03
Upper Chesapeake	0.57	0.49	-0.08
St Agnes	0.62	0.48	-0.14
BWMC	0.54	0.48	-0.06
Shady Grove	0.58	0.46	-0.12
Carroll	0.41	0.43	0.02
Howard	0.54	0.36	-0.18
Southern	0.40	0.34	-0.06
Johns Hopkins	0.56	0.33	-0.23
Harbor	0.49	0.28	-0.21

Comparison of MHAC Scores and PPHAI Scores per Hospital:



- The distributions of MHAC Scores and PPHAI Scores vary considerably.
- PPHAI Score distribution is wider (.19) than the distribution of MHAC Scores
 - PPHAI Spread: .53
 - MHAC Spread: .34
 - PPHAI Scores are more polarized
 - Suggests varied performance between hospitals
- PPHAI Scores are generally slightly lower than MHAC Scores
 - Average PPHAI Score: .54
 - Average MHAC Score: .55
 - Hospitals generally show lower performance in PPHAI Scores than in MHAC Scores

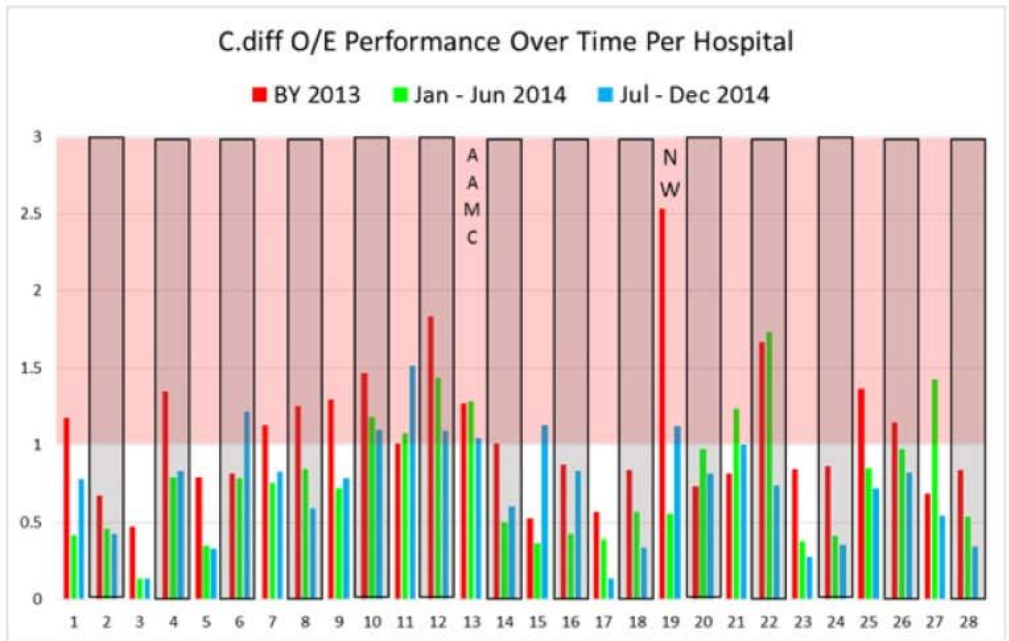
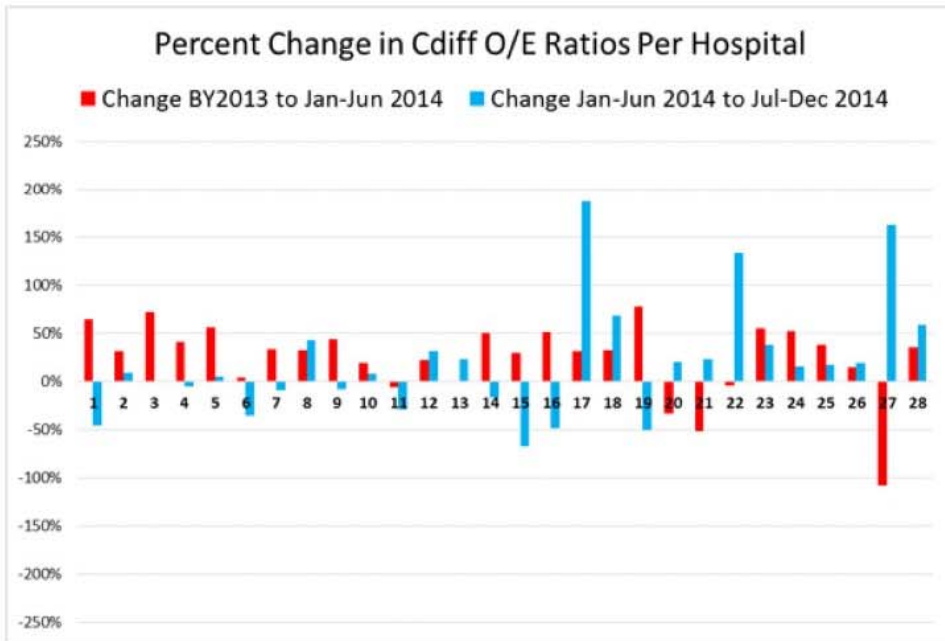


Individual PPHAI Scores Over Time

- Each hospital is assigned a score for each PPHAI
- This score is derived from each PPHAI's Observed/Expected Ratio (O/E Ratio)
- Performance is at standard or better when $O/E = 1$ or less
- O/E Ratios of each PPHAI from three time periods are compared
 - 2013: Q1, Q2, Q3, Q4
 - 2014: Q1, Q2
 - 2014: Q3, Q4

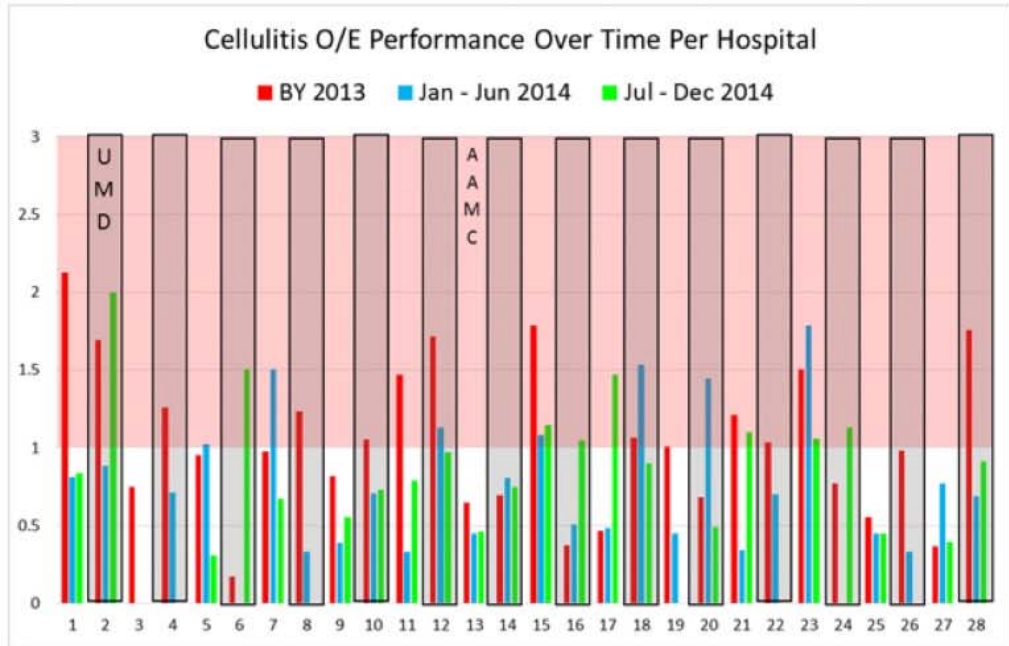
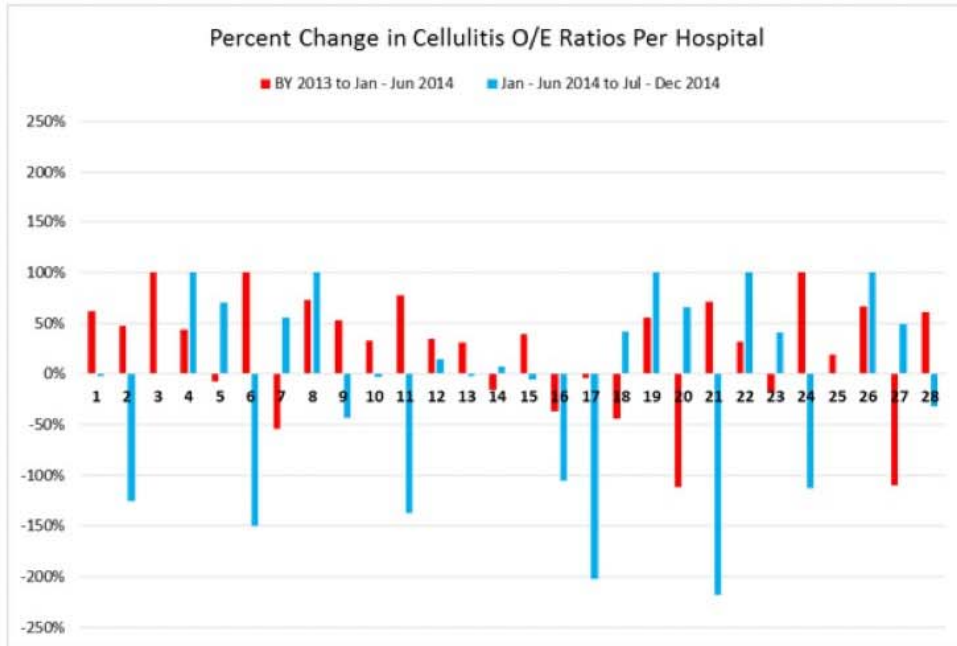
Individual Trends

1	MERITUS	11	WASHINGTON ADVENTIST	21	G.B.M.C.
2	UNIVERSITY OF MARYLAND	12	SUBURBAN	22	HOWARD COUNTY
3	PRINCE GEORGE	13	ANNE ARUNDEL	23	UPPER CHESAPEAKE HEALTH
4	HOLY CROSS	14	UNION MEMORIAL	24	DOCTORS COMMUNITY
5	FREDERICK MEMORIAL	15	WESTERN MARYLAND	25	GOOD SAMARITAN
6	MERCY	16	HOPKINS BAYVIEW	26	SHADY GROVE
7	JOHNS HOPKINS	17	CARROLL COUNTY	27	SOUTHERN MARYLAND
8	ST. AGNES	18	HARBOR	28	UM ST. JOSEPH
9	SINAI	19	NORTHWEST		
10	FRANKLIN SQUARE	20	BALTIMORE WASHINGTON		



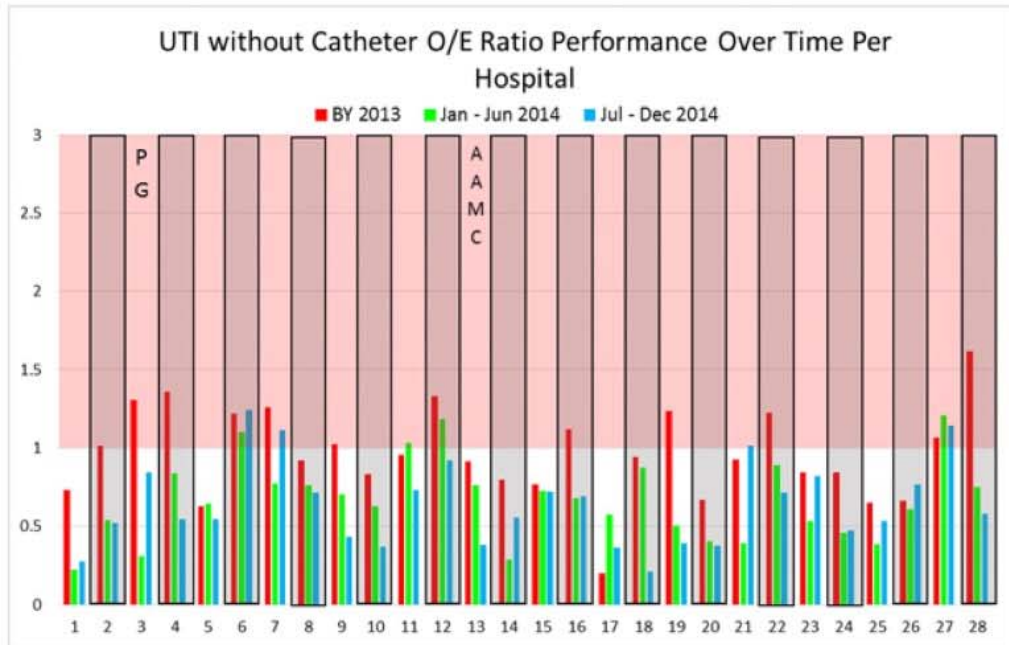
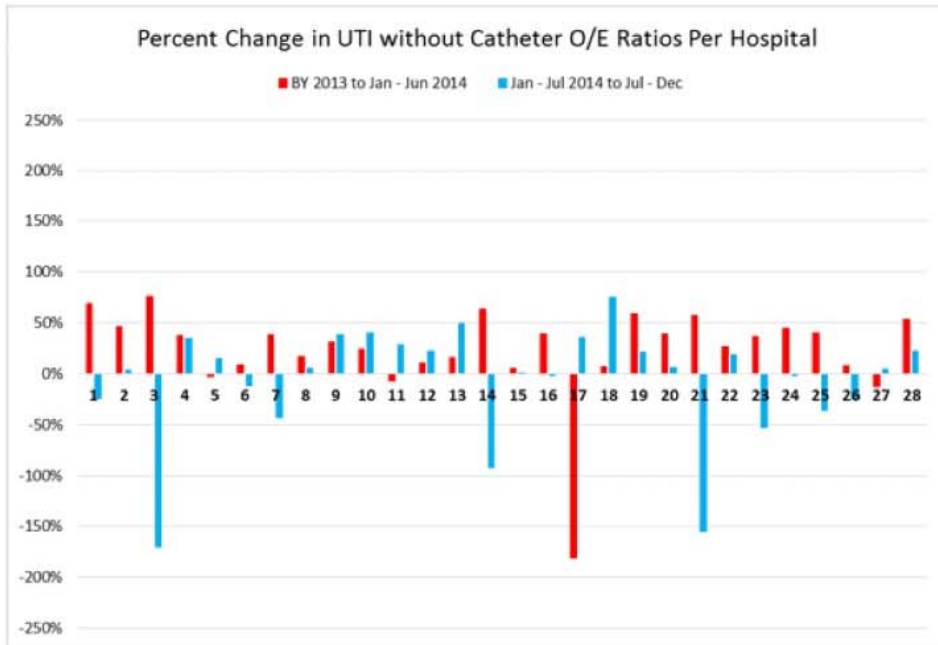
Individual Trends

1	MERITUS	11	WASHINGTON ADVENTIST	21	G.B.M.C.
2	UNIVERSITY OF MARYLAND	12	SUBURBAN	22	HOWARD COUNTY
3	PRINCE GEORGE	13	ANNE ARUNDEL	23	UPPER CHESAPEAKE HEALTH
4	HOLY CROSS	14	UNION MEMORIAL	24	DOCTORS COMMUNITY
5	FREDERICK MEMORIAL	15	WESTERN MARYLAND	25	GOOD SAMARITAN
6	MERCY	16	HOPKINS BAYVIEW	26	SHADY GROVE
7	JOHNS HOPKINS	17	CARROLL COUNTY	27	SOUTHERN MARYLAND
8	ST. AGNES	18	HARBOR	28	UM ST. JOSEPH
9	SINAI	19	NORTHWEST		
10	FRANKLIN SQUARE	20	BALTIMORE WASHINGTON		



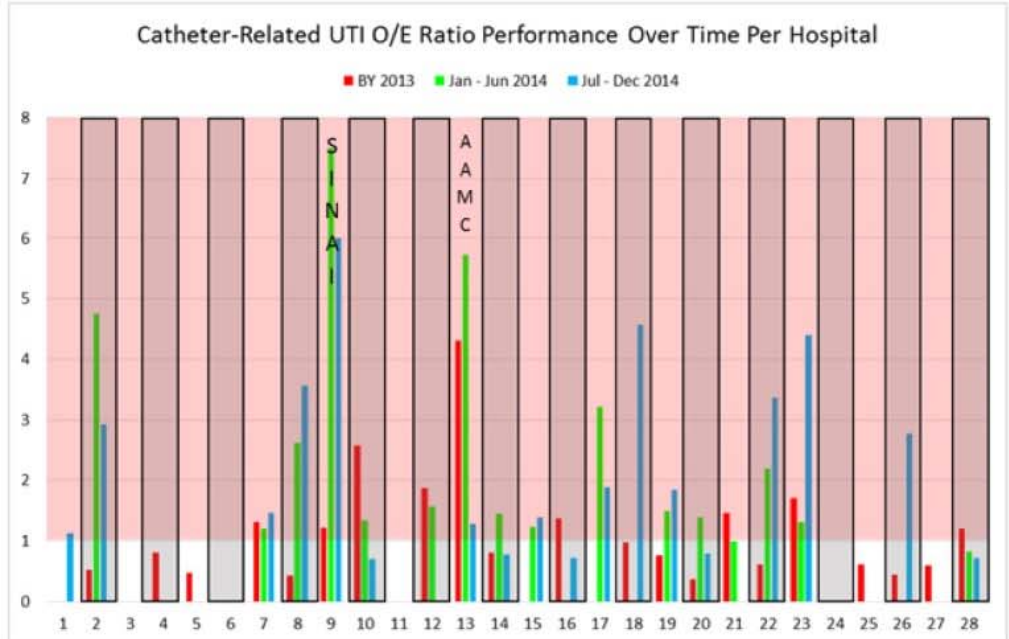
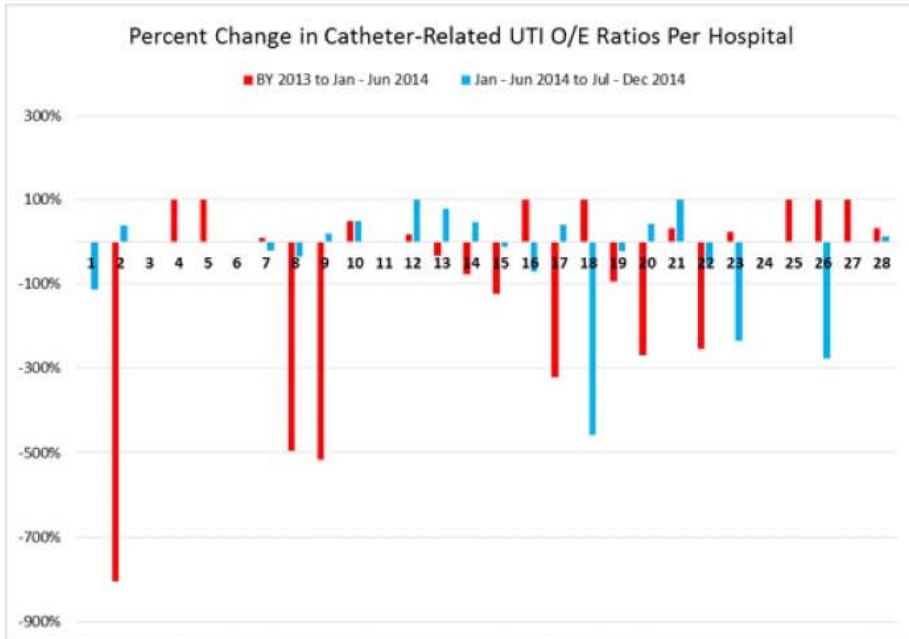
Individual Trends

1	MERITUS	11	WASHINGTON ADVENTIST	21	G.B.M.C.
2	UNIVERSITY OF MARYLAND	12	SUBURBAN	22	HOWARD COUNTY
3	PRINCE GEORGE	13	ANNE ARUNDEL	23	UPPER CHESAPEAKE HEALTH
4	HOLY CROSS	14	UNION MEMORIAL	24	DOCTORS COMMUNITY
5	FREDERICK MEMORIAL	15	WESTERN MARYLAND	25	GOOD SAMARITAN
6	MERCY	16	HOPKINS BAYVIEW	26	SHADY GROVE
7	JOHNS HOPKINS	17	CARROLL COUNTY	27	SOUTHERN MARYLAND
8	ST. AGNES	18	HARBOR	28	UM ST. JOSEPH
9	SINAI	19	NORTHWEST		
10	FRANKLIN SQUARE	20	BALTIMORE WASHINGTON		



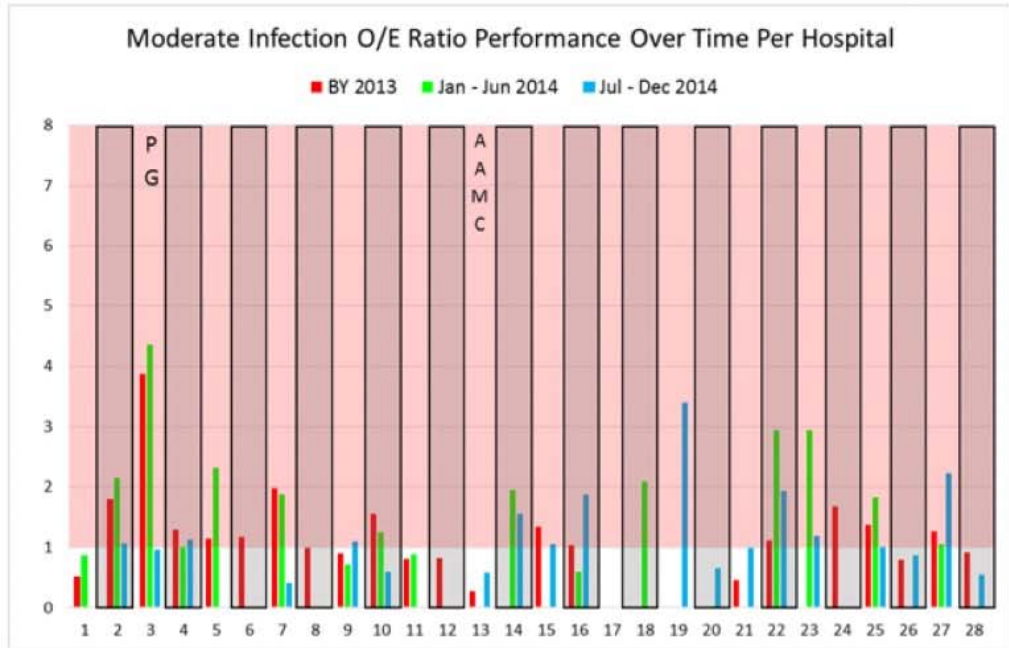
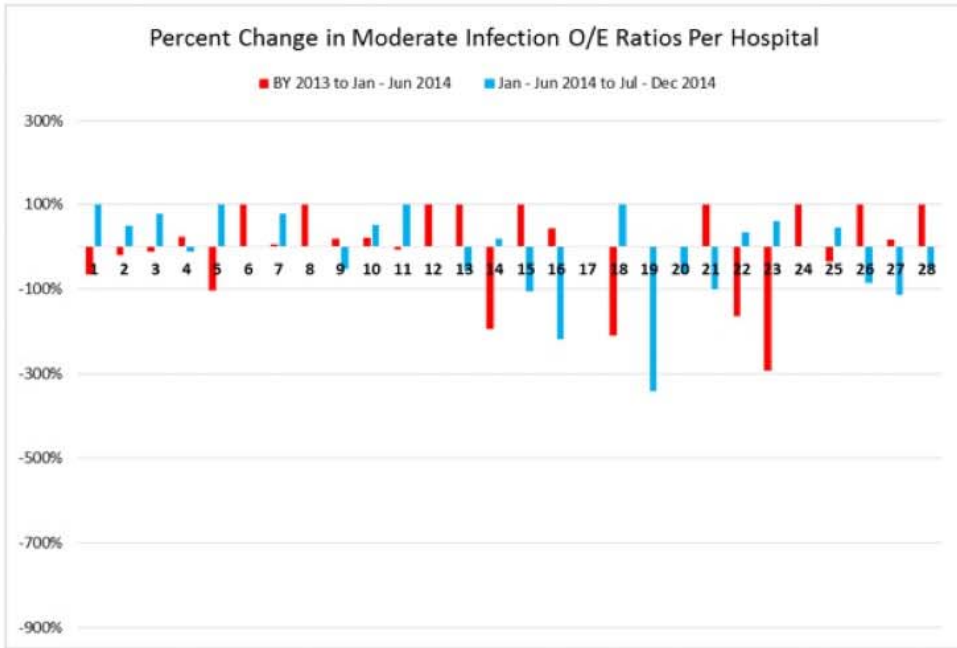
Individual Trends

1	MERITUS	11	WASHINGTON ADVENTIST	21	G.B.M.C.
2	UNIVERSITY OF MARYLAND	12	SUBURBAN	22	HOWARD COUNTY
3	PRINCE GEORGE	13	ANNE ARUNDEL	23	UPPER CHESAPEAKE HEALTH
4	HOLY CROSS	14	UNION MEMORIAL	24	DOCTORS COMMUNITY
5	FREDERICK MEMORIAL	15	WESTERN MARYLAND	25	GOOD SAMARITAN
6	MERCY	16	HOPKINS BAYVIEW	26	SHADY GROVE
7	JOHNS HOPKINS	17	CARROLL COUNTY	27	SOUTHERN MARYLAND
8	ST. AGNES	18	HARBOR	28	UM ST. JOSEPH
9	SINAI	19	NORTHWEST		
10	FRANKLIN SQUARE	20	BALTIMORE WASHINGTON		



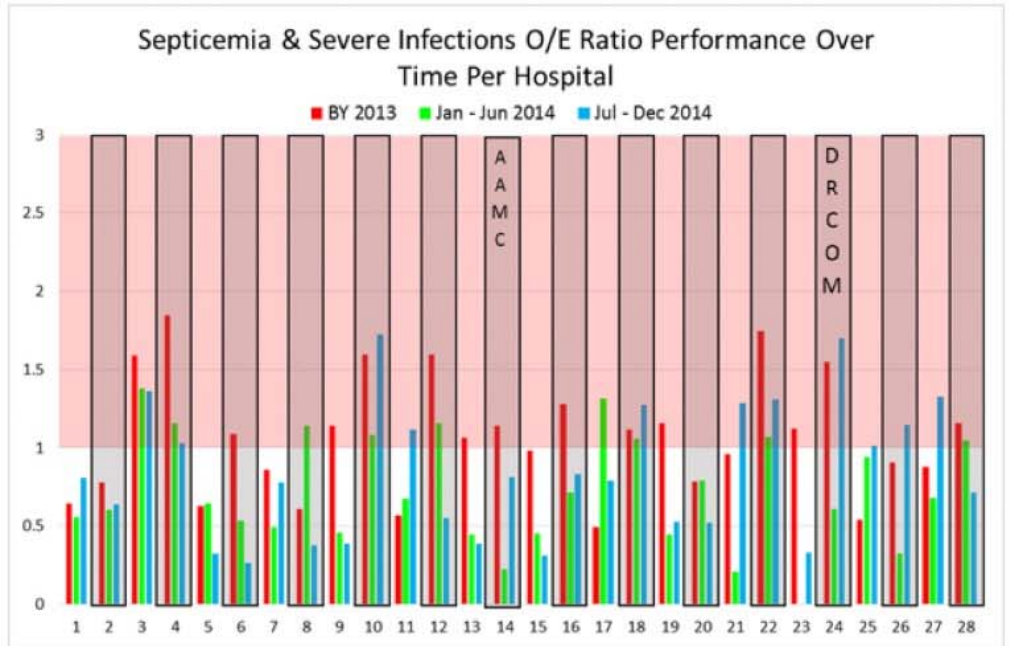
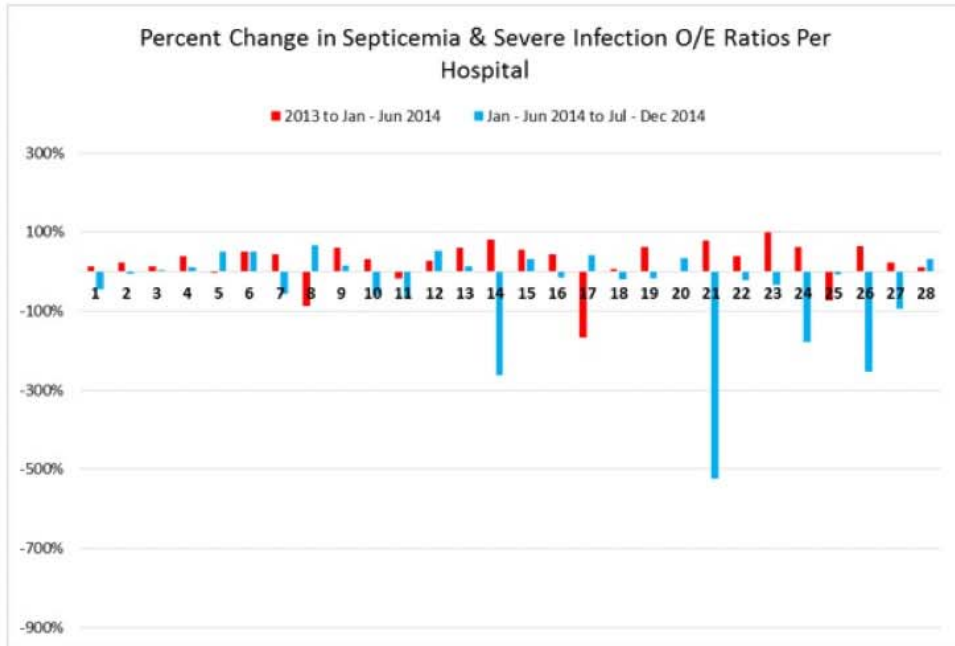
Individual Trends

1	MERITUS	11	WASHINGTON ADVENTIST	21	G.B.M.C.
2	UNIVERSITY OF MARYLAND	12	SUBURBAN	22	HOWARD COUNTY
3	PRINCE GEORGE	13	ANNE ARUNDEL	23	UPPER CHESAPEAKE HEALTH
4	HOLY CROSS	14	UNION MEMORIAL	24	DOCTORS COMMUNITY
5	FREDERICK MEMORIAL	15	WESTERN MARYLAND	25	GOOD SAMARITAN
6	MERCY	16	HOPKINS BAYVIEW	26	SHADY GROVE
7	JOHNS HOPKINS	17	CARROLL COUNTY	27	SOUTHERN MARYLAND
8	ST. AGNES	18	HARBOR	28	UM ST. JOSEPH
9	SINAI	19	NORTHWEST		
10	FRANKLIN SQUARE	20	BALTIMORE WASHINGTON		



Individual Trends

1	MERITUS	11	WASHINGTON ADVENTIST	21	G.B.M.C.
2	UNIVERSITY OF MARYLAND	12	SUBURBAN	22	HOWARD COUNTY
3	PRINCE GEORGE	13	ANNE ARUNDEL	23	UPPER CHESAPEAKE HEALTH
4	HOLY CROSS	14	UNION MEMORIAL	24	DOCTORS COMMUNITY
5	FREDERICK MEMORIAL	15	WESTERN MARYLAND	25	GOOD SAMARITAN
6	MERCY	16	HOPKINS BAYVIEW	26	SHADY GROVE
7	JOHNS HOPKINS	17	CARROLL COUNTY	27	SOUTHERN MARYLAND
8	ST. AGNES	18	HARBOR	28	UM ST. JOSEPH
9	SINAI	19	NORTHWEST		
10	FRANKLIN SQUARE	20	BALTIMORE WASHINGTON		



Conclusion and Applications

The PPHAI Score Measurement provides:

- Increased accuracy in measuring infection prevention performance
- Ability to assess the efficacy of new infection-reduction methods over time

Suggestions and Inquiries

- For more information about methodology and findings:
www.saabr.org
- Email research inquiries, suggestions, and other comments to
meganrutkai@gmail.com

Thank you!

Copyright Statement

All of the information and material inclusive of text and images is the property of Megan Rutkai and Sanitize Against AntiBiotic Resistance (SAABR). The information may not be distributed, modified, displayed, reproduced — in whole or in part— without the prior written permission of Megan Rutkai.

Disclaimer

The information contained in this document is compiled from various sources and provided on an "AS IS" basis for general information purposes only without any representations, conditions, or warranties whether express or implied, including any implied warranties or satisfactory quality, completeness, accuracy, or fitness for a particular purpose.

Megan Rutkai and SAABR disclaim any and all liability for all use of this information, including losses, damages, claims, or expenses any person may incur as a result of the use of this information, even if advised of the possibility of such loss or damage.



GBR Infrastructure Report – Template Update for FY16

Purpose of Reports

- ▶ “The purpose of this report is to inform the HSCRC and other stakeholders, including the Center for Medicaid and Medicare Services (CMS), on the amounts and types of investments that all acute hospitals in Maryland are making over time to improve population health. The report will also advise HSCRC, stakeholders, and CMS on the effectiveness of these investments in furthering the goals of the All-Payer Model. The reports will be available for any interested stakeholder.”
- ▶ **Therefore, please include all expenses for the current fiscal year associated with population health investments that began no earlier than FY 2014.**
 - ▶ List of excluded expenses remains the same.

GBR Infrastructure Dollars

- ▶ GBR Infrastructure provides monies for investments for patients with the goals of improving care and improving health while also reducing avoidable utilization.
- ▶ Intent of these monies is to accelerate the development of care coordination.
 - ▶ Focus on investments that can reduce PAU in short term.
- ▶ Partner with existing local/community health resources or links with statewide infrastructure (Community Providers, LHICs, CRISP, etc.)
- ▶ Present and track viable outcomes/metrics to evaluate effectiveness of investments.

Background

- ▶ **Areas of focus for FY16 reports:**
 - ▶ Clarification on what expenses to report
 - ▶ Improved categorization
 - ▶ Process and outcome measures
 - ▶ Staffing for Care Transitions and Care Management

Process and Outcome Metrics

- ▶ **Process metrics per each investment.**
 - ▶ At the request of the Commission.
 - ▶ How hospital is evaluating the efficacy of individual investment.
- ▶ **Outcome metrics per each investment.**
 - ▶ Instead of reiterating quality outcomes in each investment, please note if investment will influence particular quality outcome.
- ▶ **Outcome metrics at the conclusion of the report.**
 - ▶ Broader discussion of progress toward quality outcomes.

Report Template and Submission Process

- ▶ HSCRC will publish final Reporting Template with accompanying memo and instructions by the end of April.
- ▶ FY 2016 report will be due from all hospitals 90 days after the end the State fiscal year
- ▶ Questions can be directed to Andi Zumbrum

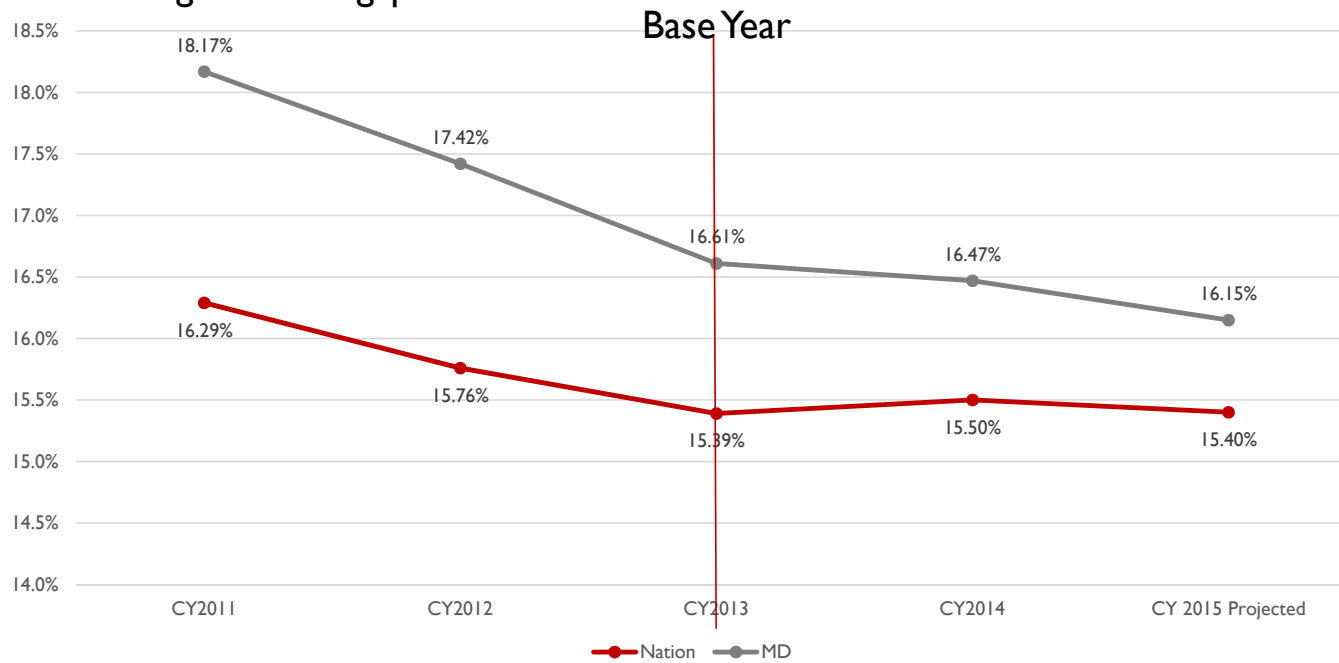
Readmission Reduction Incentive Program Draft
FY 2018 Policy

RRIP Background

- ▶ Started in CY 2014 performance year with 0.5% inpatient revenue bonus if a hospital reduced its case-mix adjusted readmission rate by 6.76% in one year.
- ▶ Last year
 - ▶ Improvement target was set at 9.3% over two years (CY 2015 compared to CY 2013 rates)
 - ▶ Rewards scaled up to 1% commensurate with improvement rates
 - ▶ Penalties scaled up to -2% were introduced for hospitals that were below the improvement target commensurate with improvement rates
 - ▶ Continue to evaluate factors that may impact performance and meeting Medicare readmission benchmarks

Medicare Benchmark: At or below National Medicare Readmission Rate by CY 2018

Maryland is reducing readmission rate faster than the nation. Maryland is projected to reduce the gap from 7.93% in the base year to 4.87 % in CY 2015*. Our target for the gap is 4.75% difference.



*HSCRC and CMMI staff identified an ICD-10 issue impacting readmission rates and are working on resolutions. Trends prior to ICD-10 indicate that Maryland meets the Medicare target.

Calculation of CMMI Medicare Readmission Test

BASE YEAR RATES

CY 2013 National Medicare Readmission Rate	A	15.39%
CY 2013 MD Medicare Readmission Rate	B	16.61%
MD vs National Difference	C=B-A	1.23%
Annual Reduction needed to Close the Gap	D=C/5	0.25%

PERFORMANCE YEAR CALCULATIONS

	National % Annual Change	National Rate	MD-National Difference	MD Target Rate	MD Actual Rate	MD-National Difference	MD % Annual Target	MD % Actual Change
A	B	C	D=1.23 % (-0.25%*2)	E	F	G=F-C	H	I
CY14	0.71%	15.50%	0.98%	16.47%	16.47%	0.97%	-0.84%	-0.85%
CY15-Estimated using Nov. Trend	-0.38%	15.44%	0.73%	16.17%	16.11%	0.67%	-1.82%	-2.17%
CY 15-Estimated using Dec. Trend	-0.59%	15.40%	0.73%	16.14%	16.16%	0.75%	-2.02%	-1.89%

Analyses of Issues Discussed in FY 2017 Policy

- ▶ Medicare vs All-Payer Targets
- ▶ Relationship between overall admissions (denominator) and readmission rate
- ▶ Impact of Socio-economic and Demographic Factors
- ▶ Impact of Observation stays
- ▶ Diminishing impact to reduce readmissions as readmission rates are lower

RRIP proposals for FY 2018

- ▶ MHA proposal combines improvement and attainment into a single payment adjustment
- ▶ Carefirst proposal blends 50/50 actual readmission rate with indigenous adjusted readmission rates
- ▶ Payment adjustments based on readmission rates (attainment) needs further considerations for;
 - ▶ Readmissions at out of state hospitals- use Medicare ratios
 - ▶ Impact of patient's socio-economic factors – Hospitals who are gaining from adjustments are losing from improvement rates.
 - ▶ Benchmarks: Staff recommends the highest benchmark rather than the state average readmission rate.

Draft Recommendations for the RRIP Policy

- ▶ For RY 2018
 - ▶ The RRIP policy should continue to be set for all-payers.
 - ▶ Hospital performance should be measured better of attainment of improvement
 - ▶ Set attainment benchmark at the state top-quartile readmission rate in the most recent performance period.
 - ▶ Set the reduction target at 9.5 percent from CY2013 readmission rates
- ▶ For RY 2017 apply the same methodology outlined above based on 9.3 reduction target as approved by the Commission last year.
- ▶ Staff will evaluate the appropriate risk adjustment in May to finalize the recommendation.

FY 2017 Improvement and Attainment Scale

Improvement Scale			Attainment Scale		
All Payer Readmission Rate Change CY13-CY15	Over/Above Target From Target	RRIP % Inpatient Revenue Payment Adjustment	Out of State Adjusted CY 2015 All-Payer Readmission Rate	Over/Above Target From Target	RRIP % Inpatient Revenue Payment Adjustment
A	B	C	D	E	F
LOWER		1.00%	Lower		1.00%
-18.00%	-8.7%	1.00%	11.04%	-8.7%	1.00%
-17.00%	-7.7%	0.89%	11.16%	-7.7%	0.89%
-16.00%	-6.7%	0.77%	11.28%	-6.7%	0.77%
-15.00%	-5.7%	0.66%	11.40%	-5.7%	0.66%
-14.00%	-4.7%	0.54%	11.52%	-4.7%	0.54%
-13.00%	-3.7%	0.43%	11.64%	-3.7%	0.43%
-12.00%	-2.7%	0.31%	11.76%	-2.7%	0.31%
-11.00%	-1.7%	0.20%	11.88%	-1.7%	0.20%
-10.00%	-0.7%	0.08%	12.01%	-0.7%	0.08%
-9.30%	0.0%	0.00%	12.09%	0.0%	0.00%
-8.00%	1.3%	-0.14%	12.25%	1.3%	-0.14%
-7.00%	2.3%	-0.25%	12.37%	2.3%	-0.25%
-6.00%	3.3%	-0.36%	12.49%	3.3%	-0.36%
-5.00%	4.3%	-0.47%	12.61%	4.3%	-0.47%
-4.00%	5.3%	-0.58%	12.73%	5.3%	-0.58%
-3.00%	6.3%	-0.69%	12.85%	6.3%	-0.69%
-2.00%	7.3%	-0.80%	12.97%	7.3%	-0.80%
-1.00%	8.3%	-0.91%	13.09%	8.3%	-0.91%
0.00%	9.3%	-1.02%	13.21%	9.3%	-1.02%
1.00%	10.3%	-1.13%	13.34%	10.3%	-1.13%
2.00%	11.3%	-1.23%	13.46%	11.3%	-1.23%
3.00%	12.3%	-1.34%	13.58%	12.3%	-1.34%
4.00%	13.3%	-1.45%	13.70%	13.3%	-1.45%
5.00%	14.3%	-1.56%	13.82%	14.3%	-1.56%
6.00%	15.3%	-1.67%	13.94%	15.3%	-1.67%
7.00%	16.3%	-1.78%	14.06%	16.3%	-1.78%
8.00%	17.3%	-1.89%	14.18%	17.3%	-1.89%
9.00%	18.3%	-2.00%	14.30%	18.3%	-2.00%
Higher		-2.00%	Higher		-2.00%

Readmission Measure

- ▶ **RY 2018 Measure Changes:**
 - ▶ Update Planned Admission Logic v4
 - ▶ Revise transfer logic to count same and next day admissions as transfers
 - ▶ Remove rehabilitation cases (using type of daily service) due to ICD-10 issues
 - ▶ Suspend oncology cases (using APR-DRGs)

- ▶ **RY 2017 current readmission rates are preliminary:**
 - ▶ ICD-10 issues related to rehab
 - ▶ Data will be refreshed to run final report

Rate Year (RY) 2017 Potentially Avoidable
Utilization Savings Policy Draft Recommendation

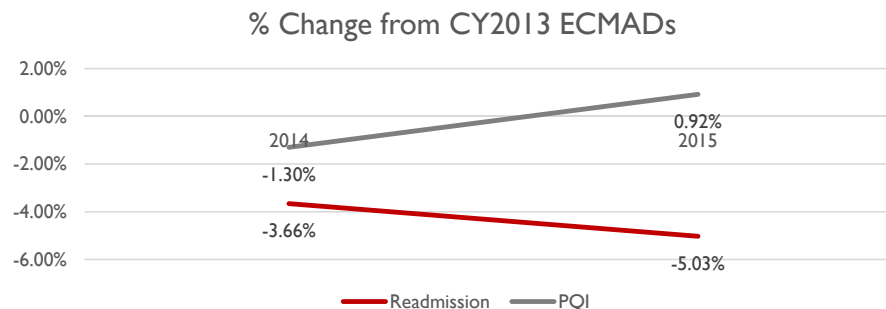
Background

- ▶ Ensure savings to the purchasers from incentive programs and satisfy exemption requirements from Medicare programs
- ▶ Started in RY 2014 in conjunction with the Admission Readmission Revenue (ARR) Program
- ▶ All-Payer Model moved the payments to global budgets
 - ▶ RY2016 Policy remained the focus on readmissions because of concerns over progress in readmissions reductions
 - ▶ Aligned the readmission measure from same hospital readmissions to any hospital within the state
 - ▶ Capped the reductions to statewide average for hospitals that are above the 75th percentile on the percentage of Medicaid discharges for those over 18



Proposed Changes to the Savings Policy

- ▶ Align the shared savings with Potentially Avoidable Utilization in the market shift adjustments
 - ▶ Add Prevention Quality Indicators (PQI)*
 - ▶ Readmissions are counted at the receiving hospital
 - ▶ Add observation stays lasting 23 hour or longer to inpatient discharges



*Developed Agency For Health Care Quality and Research http://www.qualityindicators.ahrq.gov/modules/pqi_overview.aspx
Also known as Ambulatory Care Sensitive Conditions, that is conditions for which good outpatient care can potentially prevent the hospitalization.

RY 2017 PAU Savings Draft Recommendations

- ▶ Align the measure with the PAU definitions used in the market shift adjustment
- ▶ Set the value of the PAU savings amount to 1.25 percent of total permanent revenue in the state, which is a 0.65 percent net reduction in RY 2017.
- ▶ Cap the PAU savings reduction at the statewide average reduction for hospitals with higher socio-economic burden.
- ▶ Evaluate further expansion of PAU definitions for RY 2018 to incorporate additional categories of unplanned admissions.
- ▶ Evaluate progress on sepsis coding and the apparent discrepancies in levels of sepsis cases across hospitals, including the need for possible independent coding audits.

PAU Savings State-Wide Calculation and Hospital A Example

Table 1: Calculation of Statewide PAU Savings		
Total Approved Permanent Revenue	A	\$15.2 mil.
Proposed Net PAU Savings %	B	-0.65%
Proposed Net PAU Savings (\$)	$C=A*B$	-\$98.9 mil.
State PAU %	D	11.99%
State PAU \$	$E=A*D$	\$1.8 mil.
PAU Net Reduction %	$F=C/D$	-5.42%
Hospital A Total Revenue	G	\$500 mil.
Hospital A Total PAU \$	H	\$40 mil.
Hospital A Total PAU %	I	8.0%
Hospital A PAU Savings \$	$J=H*F$	-\$2.1 mil.
Hospital A PAU Savings as % Total Revenue	$K=J/G$	-0.43%

**DRAFT Recommendation for the Aggregate Revenue Amount At-Risk
under Maryland Hospital Quality Programs for Rate Year 2018**

RY 2017 Year to Date Results

	MHAC*	RRIP**	QBR***	PAU Savings***	Net PAU Savings***	PAU*	State Aggregate	Hospital Net
	A	B	C	D	E	F	G=Sum(A-D)	
Potential At Risk (Absolute Value)	3.00%	2.00%	2.00%	4.36%	3.52%		11.36%	
Maximum Hospital Penalty (% Inpatient Revenue)	-0.25%	-2.00%	-1.78%	-4.36%	-3.52%		-8.38%	-3.10%
Maximum Hospital Reward (% Inpatient Revenue)	1.00%	1.00%	1.00%	NA	0.44%	NA	3.00%	1.41%
Average Absolute Level Adjustment (% Inpatient Revenue)	0.42%	0.65%	0.51%	2.56%	1.60%		4.13%	1.35%
Total Penalty	-\$502,722	-\$36,224,835	-\$4,980,623	-\$190,634,642	-\$99,309,267		-\$141,017,447	
Total Reward	\$29,403,229	\$8,358,316	\$33,335,873	\$0	\$278,971	NA	\$71,097,418	
Total Net Adjustments	\$28,900,507	-\$27,866,519	\$28,355,250	-\$190,634,642	-\$99,309,267		-\$69,920,029	
% Total GBR Revenue	0.19%	-0.18%	0.19%	-1.25%	-0.65%		-0.46%	

*All calculations are preliminary subject to the assessment of ICD-10 impact.

**RRIP results are preliminary results as of December 2015 and do not reflect any potential protections that may be developed based on the approved RY 2017 recommendation.

***QBR YTD results are preliminary estimates based on two quarters of new data due to data lag for measures from CMS. Staff will provide updated calculations for the final recommendation.

****PAU Savings are based on 0.65 % net statewide reduction based on draft FY2017 recommendation.

DRAFT Recommendations

- ▶ No change is recommended to FY 2017 levels

	Max Penalty	Max Reward
MHAC Below target	-3.0%	0.0%
MHAC Above Target	-1.0%	1.0%
RRIP	-2.0%	1.0%
QBR	-2.0%	1.0%

- ▶ Continue to set the maximum penalty guardrail at 3.5 percent of total hospital revenue
- ▶ The quality adjustments should be applied to inpatient revenue centers, similar to the approach used by CMS. The HSCRC staff can apply the adjustments to hospitals' medical surgical rates to concentrate the impact of this adjustment to inpatient revenues, consistent with federal policies.

Performance Measurement Future Strategy

Maryland Value-Based Payment Strategy in FY 2019 and Beyond

- ▶ Performance Measurement and Payment Strategy under All-Payer Model
- ▶ Revisions for the existing pay-for-performance programs and timelines
- ▶ Potential areas for discussion and input
 - ▶ **Additional Measures of Potentially Avoidable Utilization**
 - ▶ **Service Line Specific/Patient Centric Value Measurement**
 - ▶ **New Areas of Measurement**
 - ▶ **Patient Centricity**
 - ▶ **High-Need Patients/Chronic Conditions/Care Coordination Measures**
 - ▶ **Emergency Department (ED), Outpatient, Imaging measures**
 - ▶ **Population Health**

Development of a Risk-Adjusted Readmission Rate: Preliminary

May 2016 Update

Matthew Sweeney

Overview of recent work

- **Develops regression-based adjustment model**
 - **Converts current approach to use regression-based approach**
 - APR-DRG SOI fixed effects model
 - **Assesses model fit and predictive properties**
 - **Tests whether simpler model yields similar results**
 - Reduces the number of variables needed in the model
- **Tests impacts of adding covariates to the model**
 - **Impacts on model fit**
 - **Impacts on hospital rates, and improvement from CY2013 to CY2015**
 - **Covariates tested:**
 - Age
 - Gender
 - Elixhauser co-morbidities
 - Primary payer
 - ADI

May Updates

- **Test new model specifications**
 - An “ADI only” model
 - Model that controls for hospital-level percentage of patients from high-ADI areas (85th percentile or higher)

- **Re-run analyses of improvement rates**
 - Eliminate bias due to comorbidities undetected after ICD-10 implementation in October, 2015
 - Exclude Q4 of both 2013 and 2015

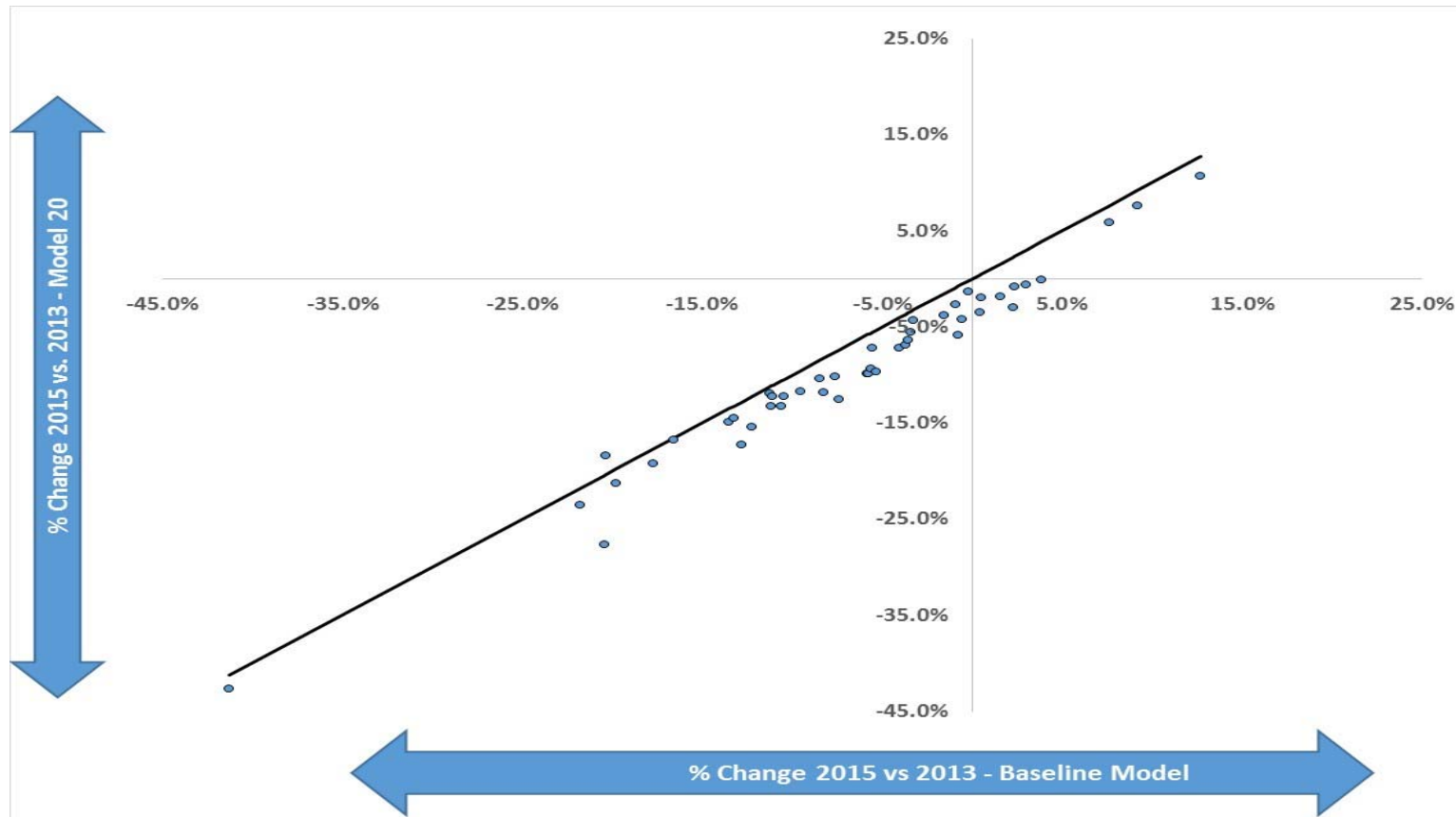
Summary of Models

Model	APR-SOI Fixed Effects	CY 2013 Norms	Age and Gender	Elixhauser Comorbidities	Payer	ADI	High-ADI Hospital Control
Baseline	Yes	No	No	No	No	No	No
B2	No	No	No	No	No	Yes	No
15	No	Yes	No	No	No	No	No
18	No	Yes	Yes	Yes	No	No	No
19	No	Yes	Yes	Yes	Yes	No	No
20	No	Yes	Yes	Yes	Yes	Yes	No
21	No	Yes	Yes	Yes	Yes	Yes	Yes

Model Fit Statistics

Model	Controls	Number of Observations	c-statistic	Max-rescaled R square
Baseline	APR-DRG SOI Fixed Effects	561,903	0.712	0.128
B2	ADI Only	561,903	0.547	0.006
15	CY 2013 Norms	561,903	0.712	0.127
18	Model 15 Plus: Age, Gender, Comorbidities	561,903	0.726	0.142
19	Model 18 Plus: Primary Payer	561,903	0.730	0.147
20	Model 19 Plus: ADI	561,903	0.731	0.148
21	Model 20 Plus: Hospital-level High-ADI control	561,903	0.732	0.149

Impact of Using Model 20



Source: Mathematica analysis of 2013 and 2015 Readmissions data provided by HSCRC.

Notes: (1) Quarter 4 of 2013 and 2015 have been excluded because of discharges containing ICD10 in Q42015.

(2) Baseline model controls for APR-DRG SOI fixed effects

(3) Model 20: controls for (logged) CY 2013 norms, age, gender, comorbidities, primary payer, and ADI

Impact of Using Model 21



Source: Mathematica analysis of 2013 and 2015 Readmissions data provided by HSCRC.

Notes: (1) Quarter 4 of 2013 and 2015 have been excluded because of discharges containing ICD10 in Q42015.

(2) Baseline model controls for APR-DRG SOI fixed effects

(3) Model 21: controls for (logged) CY 2013 norms, age, gender, comorbidities, primary payer, patient ADI, and hospital percentage of high ADI patients