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2.1 Attach Logic Model

Table 1

Summary: Recommended treatment therapy with dual antiplatelet therapy (DAPT: aspirin plus platelet P2Y12 receptor inhibitors) markedly lowers the risk of acute stent thrombosis and DAPT is included in this composite medication due to the evidence demonstrating that its use can reduce the risk of adverse outcomes such as MI or death after stenting (ATT Collaboration, 2002; ATT Collaboration, 2009; Palmerini, 2015; Khan, 2020). Statins are demonstrated to delay progression of atherosclerosis and prevent recurrent coronary events (CTT Collaboration, 2010; CTT Collaboration, 2019). The use of these three medication classes is strongly recommended by national consensus practice guidelines to reduce adverse events or death following PCI.

Inputs	Activities	Outputs	Outcomes & Impact
Quality improvement activities such as multidisciplinary teams, clinician and staff education based on clinical recommendations, and tracking of performance against a dashboard Tools and technology integration such as hospital protocols and automated order sets in the electronic health record system (EHRs) Patient education materials	Implementation of quality improvement activities and tools and technology integration Delivery of patient education materials	Aspirin, P2Y12 inhibitor, and statin prescription rates at discharge Use of technology/tools , depending on individual hospital implementation needs (e.g., rates of automated order sets) Number of patient education materials distributed	<u>Short-term</u> Increased rates of prescriptions of all three medications in patients at discharge following PCI Increased clinician and patient awareness and attention to prescribing and filling medications Ability of the facility to track interventions and progress on prescription rates <u>Intermediate-term</u> Improved clinician documentation and use of tools and technology (e.g., automated order sets) Increased adherence to medications by patients following hospital discharge Improved tracking on progress to addressing this important gap in care by the facility and NCDR registries <u>Long-term</u> Reductions in complications (e.g., recurrent MI) and mortality Decrease in unnecessary costs

Table 2

Feedback Mechanisms
Data analysis and performance reports produced by the facility and/or NCDR registries
Quality improvement activities and reporting of progress on outputs to clinicians and staff
Patient satisfaction surveys
Assumptions
Systems have access to high-quality EHRs data and computational resources to support the capture and analysis of prescription rates.
Feedback on performance of this measure will increase prescription rates and ultimately improve patient outcomes and quality of life.
External Factors
Complimentary measures focused on secondary prevention in the ambulatory care setting will be important to ensure patient adherence.
Policies and clinician attitudes regarding measures could affect the outcomes identified above.

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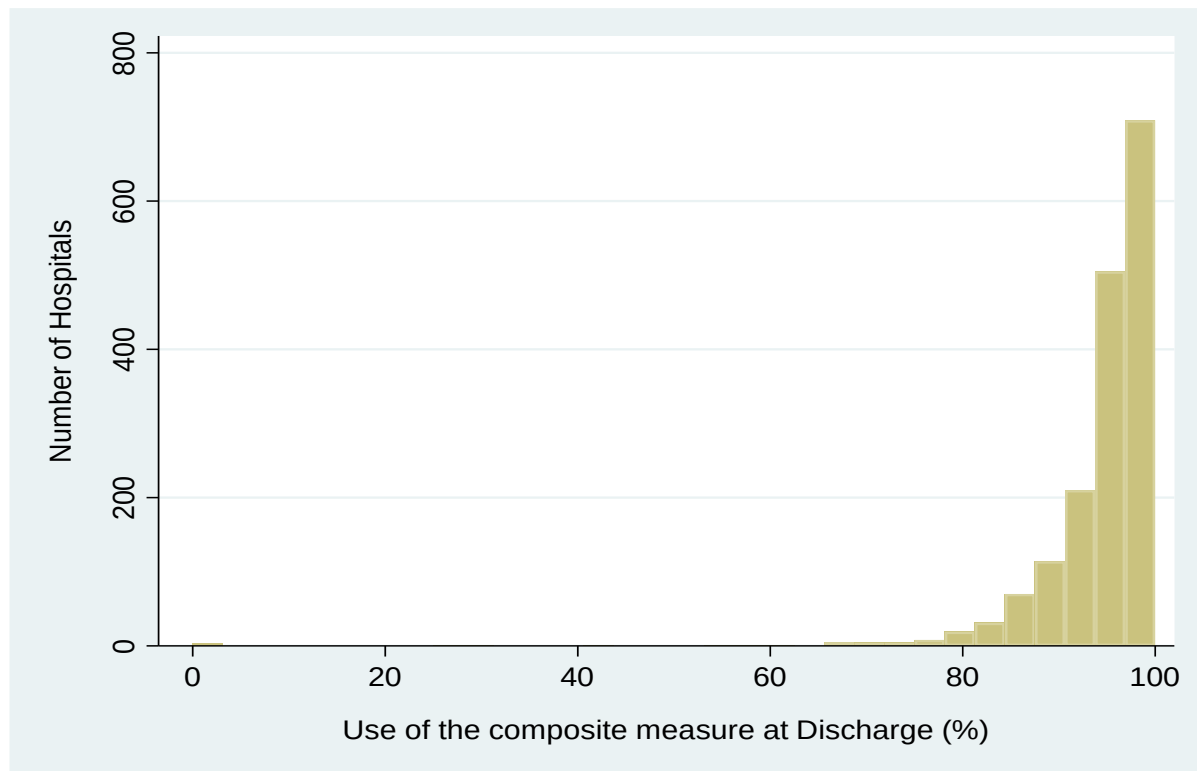
Palmerini T, Benedetto U, Bacchi-Reggiani L, et al. Mortality in patients treated with extended duration dual antiplatelet therapy after drug-eluting stent implantation: a pairwise and Bayesian network meta-analysis of randomised trials. *Lancet*. 2015;385(9985):2371-2382. doi:10.1016/S0140-6736(15)60263-X

2.4 Performance Gap

Table 3: Distribution of Performance of Discharge Medications Composite (N=1688 Hospitals)

Description	Discharge Medications Composite
N	1688
Mean	94.5%
Std Deviation	7.0%
100% Max	100.0%
99%	100.0%
95%	99.8%
90%	99.3%
75% Q3	98.2%
50% Median	96.3%
25% Q1	93.1%
10%	88.1%
5%	84.9%
1%	71.0%
0% Min	0.0%

Figure 1: Histogram of Performance of the Discharge Medications



3.1 Contributions Toward Advancing Health Equity

Table 4: Distribution of Performance Rate for Discharge Medication Composite Measure at Discharge Stratified by Hospital Quartile Non-White Patients at the Hospital-Level (N=1688)

Description	Non-White (%)			
	Q1	Q2	Q3	Q4
Mean	18.0%	93.9%	94.8%	94.7%
Std Deviation	16.5%	7.7%	6.2%	6.6%
100% Max	100.0%	100.0%	100.0%	100.0%
99%	76.5%	100.0%	100.0%	100.0%
95%	51.9%	100.0%	99.7%	99.7%
90%	40.6%	99.3%	99.2%	99.3%
75% Q3	24.6%	98.0%	98.1%	98.2%
50% Median	13.2%	95.6%	96.5%	96.2%
25% Q1	6.2%	92.4%	93.6%	93.3%

10%	2.8%	86.7%	88.8%	88.6%
5%	1.3%	84.1%	84.9%	85.8%
1%	0.0%	66.7%	73.3%	76.5%
0% Min	0.0%	0.0%	25.2%	0.0%

Figure 2: Distribution of Performance Rate for Discharge Medication Composite Measure at Discharge Stratified by Hospital Quartile Non-White Patients at the Hospital-Level (N=1688)

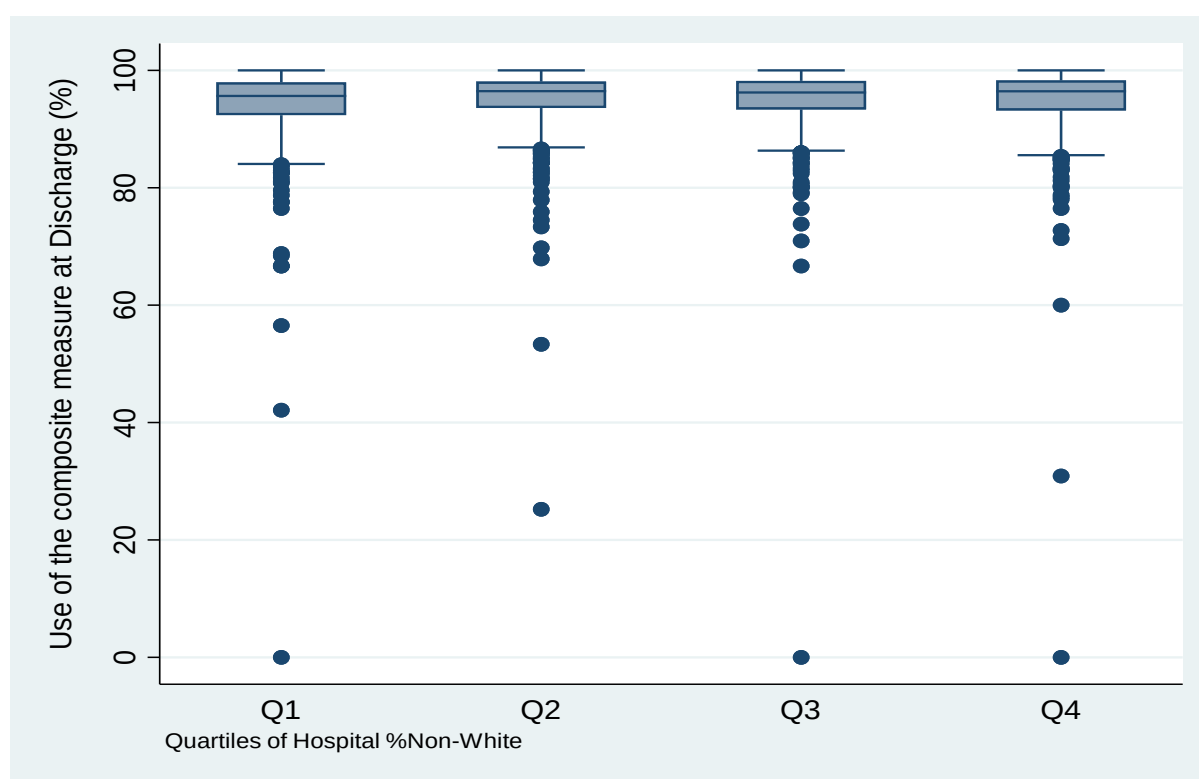


Table 5: Distribution of Performance Rate for Discharge Medication Composite Measure at Discharge Stratified by Gender at the Hospital-Level (N=1688)

Description	Gender	
	Female	Male
Mean	94.3%	94.6%
Std Deviation	7.8%	7.1%

100% Max	100.0%	100.0%
99%	100.0%	100.0%
95%	100.0%	100.0%
90%	100.0%	99.6%
75% Q3	98.6%	98.3%
50% Median	96.3%	96.3%
25% Q1	92.6%	93.1%
10%	86.7%	88.0%
5%	82.4%	84.8%
1%	70.6%	72.4%
0% Min	0.0%	0.0%

Figure 3: Distribution of Performance Rate for Discharge Medication Composite Measure at Discharge Stratified by Gender at the Hospital-Level (N=1688)

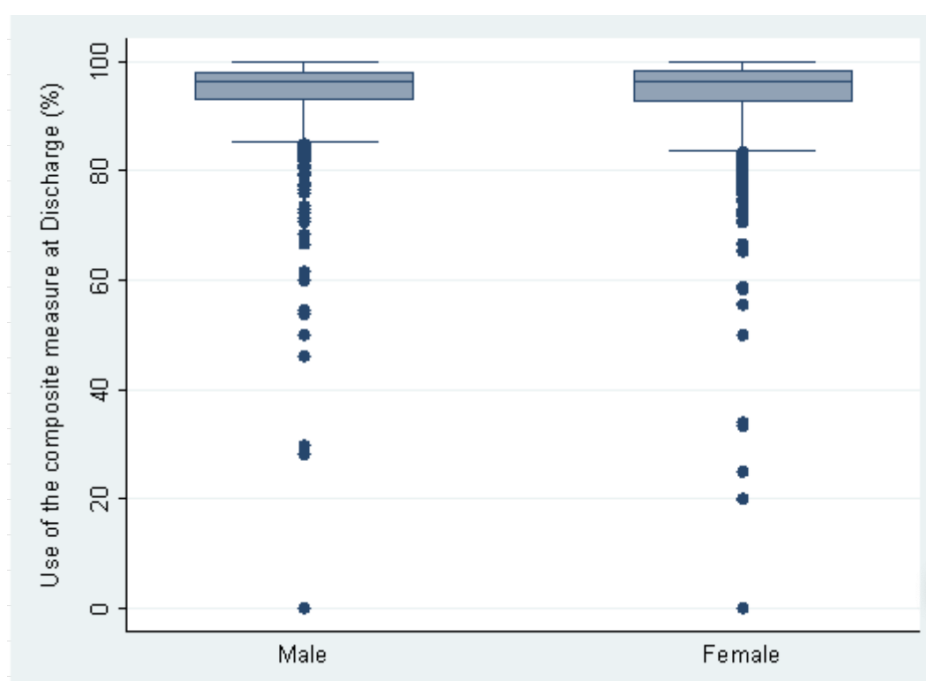


Table 6. Distribution of the Performance of the Discharge Medication Composite Stratified by Age at the Hospital-Level

Description	Age Group	
	Age $\geq$ 65	Age < 65
Mean	93.5%	96.0%

Std Deviation	7.8%	6.9%
100% Max	100.0%	100.0%
99%	100.0%	100.0%
95%	100.0%	100.0%
90%	99.4%	100.0%
75% Q3	98.0%	99.2%
50% Median	95.5%	97.6%
25% Q1	91.6%	95.1%
10%	85.7%	91.2%
5%	81.2%	88.1%
1%	66.0%	77.4%
0% Min	0.0%	0.0%

Figure 4. Distribution of the Performance of the Discharge Medication composite Stratified by Age at the Hospital-Level

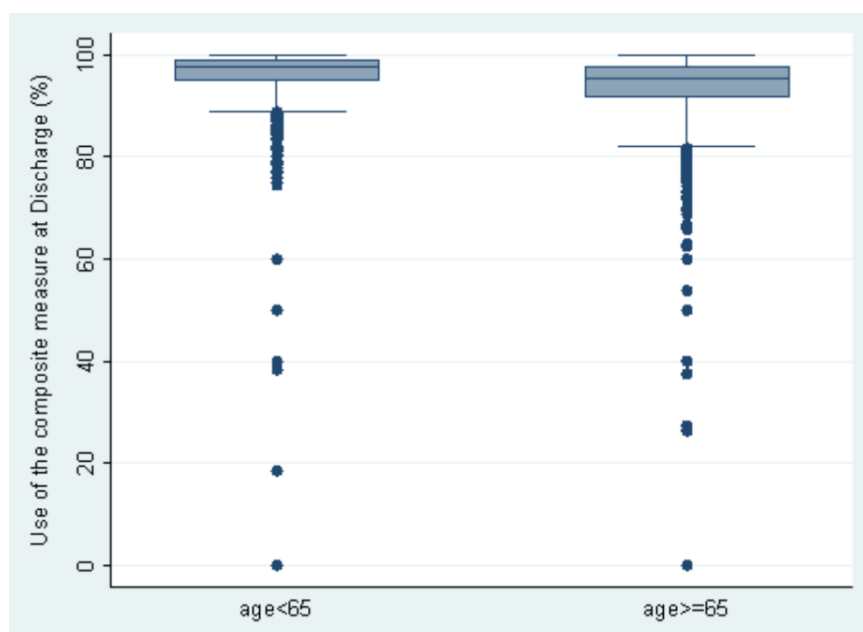


Table 7. Distribution of Performance for the Discharge Medications Composite Measure Stratified by Race/Ethnicity at the Hospital-Level

Description	Race			
	Hispanic	White non-Hispanic	Black non-Hispanic	Other
N Hospitals	1541	1687	1537	1564

Mean	95.9%	94.1%	95.4%	95.4%
Std Deviation	9.9%	7.8%	9.9%	11.0%
100% Max	100.0%	100.0%	100.0%	100.0%
99%	100.0%	100.0%	100.0%	100.0%
95%	100.0%	100.0%	100.0%	100.0%
90%	100.0%	99.4%	100.0%	100.0%
75% Q3	100.0%	98.2%	100.0%	100.0%
50% Median	100.0%	96.0%	100.0%	100.0%
25% Q1	95.2%	92.6%	94.4%	94.6%
10%	88.5%	87.1%	87.5%	87.5%
5%	81.5%	83.3%	80.0%	80.0%
1%	50.0%	69.4%	50.0%	50.0%
0% Min	0.0%	0.0%	0.0%	0.0%

Figure 5. Distribution of Performance for the Discharge Medications Composite Measure Stratified by Race at the Hospital-Level

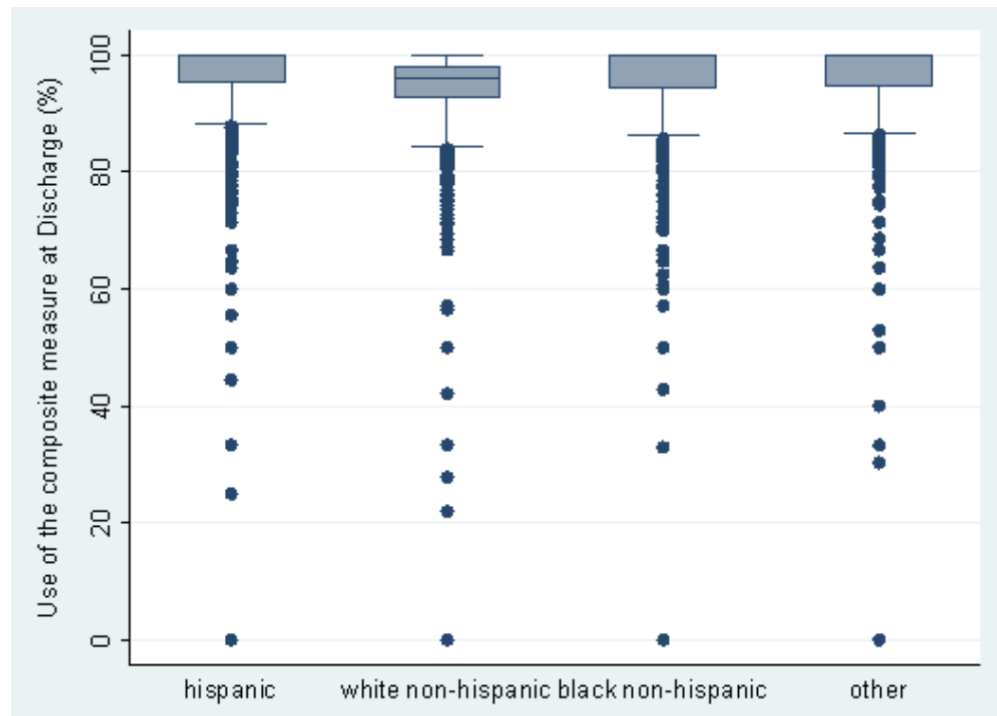
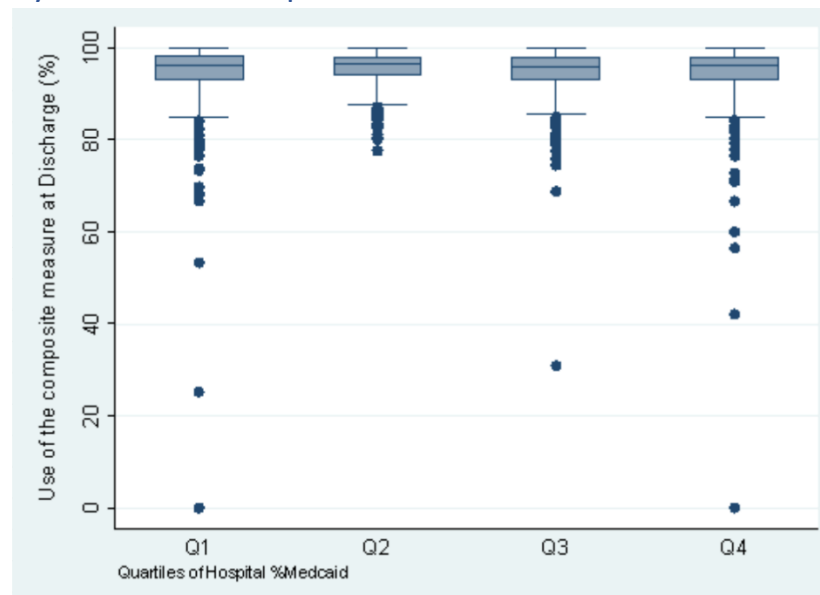


Table 8. Distribution of Performance for the Discharge Medications Composite Measure Stratified by Medicaid at the Hospital-Level

Description	Medicaid (%)	Medicaid (%)			
		Q1	Q2	Q3	Q4
Mean	13.6%	94.1%	95.3%	94.4%	94.2%
Std Deviation	10.0%	9.3%	4.1%	5.8%	7.7%
100% Max	76.8%	100.0%	100.0%	100.0%	100.0%
99%	50.0%	100.0%	100.0%	100.0%	100.0%
95%	32.7%	100.0%	99.8%	99.4%	100.0%
90%	25.3%	99.5%	99.3%	99.0%	99.3%
75% Q3	17.2%	98.3%	98.2%	98.0%	98.2%
50% Median	11.5%	96.3%	96.4%	95.9%	96.1%
25% Q1	7.0%	92.8%	93.8%	92.9%	92.8%
10%	3.7%	88.1%	89.3%	87.3%	87.7%
5%	1.9%	83.9%	86.6%	83.3%	85.0%
1%	0.0%	66.7%	82.6%	77.5%	66.7%
0% Min	0.0%	0.0%	77.6%	30.9%	0.0%

Figure 6. Distribution of the Performance for the Discharge Medication Stratified by Quartile of Hospital Percent Medicaid



5.1.3 Characteristics of Measured Entities

Table 9. Entities Evaluated by Level of Analysis

Table 1: Entities Evaluated by Level of Analysis			
Level of Analysis	Variable	Data Source	Number
Patient	Patient Hospital Stay	NCDR CathPCI Registry	669,479
Hospital	Facilities	NCDR CathPCI Registry	1688

5.1.4 Characteristics of Units of Eligible Population

Table 10. Descriptive Statistics for the Patients Included

Description	#	%
ALL	669,479	100.00
Age≥65		
No	252,152	37.66
Yes	417,327	62.34
Female		
No	464,973	69.45
Yes	204,506	30.55
RACE		
Hispanic	49,253	7.36
White non-Hispanic	516,539	77.16
Black non-Hispanic	56,396	8.42
Other	47,291	7.06
Insurance		
Medicare	387,102	57.82
Medicaid	48,906	7.31
Private	192,911	28.82
Other	39,939	5.97
None	621	0.09

5.2.3 Reliability Testing Results

Table 11: Split Samples

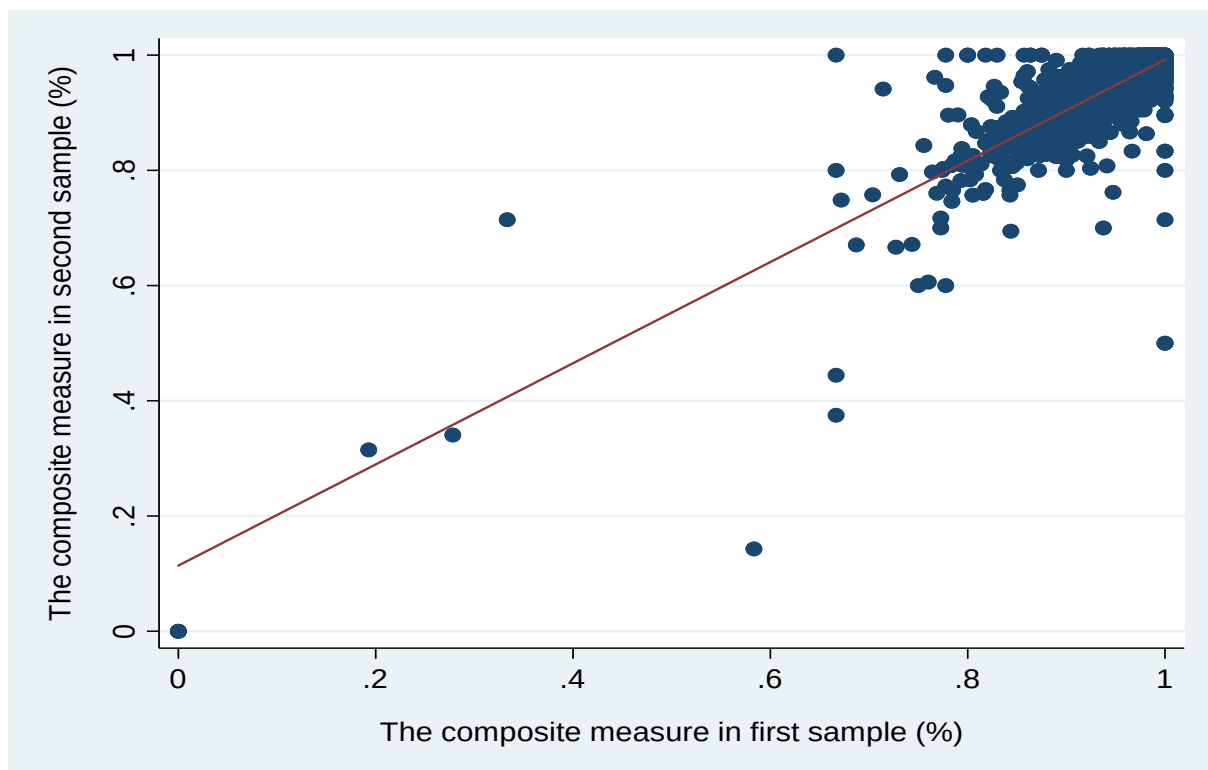
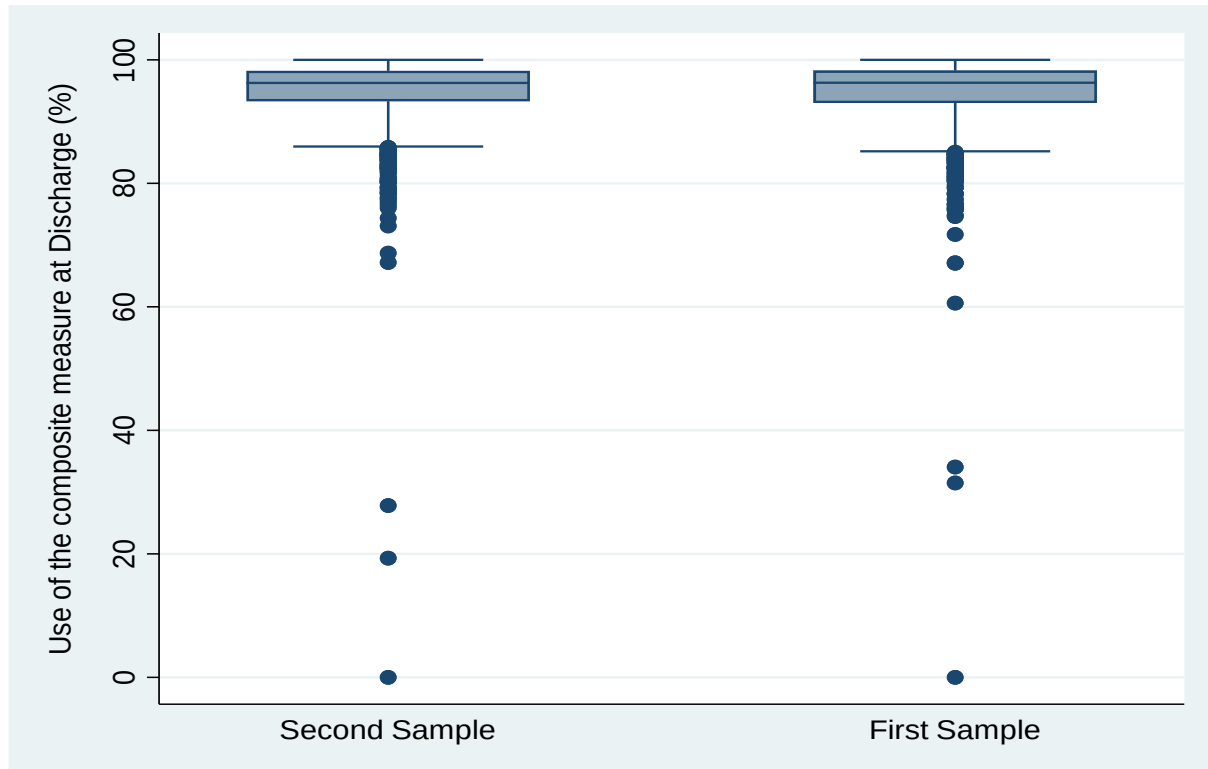
Description	Randomly Split Samples	
	First (RAND=1)	Second (RAND=0)

N, Patients	335,313	334,166
N, Hospitals	1686	1687
Mean	94.4%	94.6%
Std Deviation	7.6%	7.2%
100% Max	100.0%	100.0%
99%	100.0%	100.0%
95%	100.0%	100.0%
90%	100.0%	100.0%
75% Q3	98.4%	98.4%
50% Median	96.3%	96.3%
25% Q1	92.9%	93.0%
10%	87.9%	87.7%
5%	83.3%	84.0%
1%	69.4%	73.1%
0% Min	0.0%	0.0%

Correlation coefficient: 0.82758

Cronbach Coefficient: 0.905658

Figure 7: Distribution of Performance for the Composite Measure at Discharge Stratified by the Randomly Split Samples (Top) and by Split Sample Correlation (Bottom)



5.3.4 Validity Testing Results

Table 12: Distribution of Performance for the Composite Measure and its Components (n hospitals = 1688)

Description	Overall Discharge Medication Composite	Discharge with Aspirin	Discharge with P2Y12	Discharge with Statin
N	1688	1688	1688	1688
Mean	94.5%	96.4%	99.1%	97.9%
Std Deviation	7.0%	5.3%	4.3%	5.6%
100% Max	100.0%	100.0%	100.0%	100.0%
99%	100.0%	100.0%	100.0%	100.0%
95%	99.8%	100.0%	100.0%	100.0%
90%	99.3%	100.0%	100.0%	100.0%
75% Q3	98.2%	99.1%	100.0%	99.7%
50% Median	96.2%	97.7%	99.8%	99.0%
25% Q1	93.1%	95.2%	99.2%	97.7%
10%	88.1%	91.8%	97.9%	95.3%
5%	84.9%	88.9%	96.7%	93.4%
1%	70.9%	81.9%	89.5%	84.8%
0% Min	0.0%	0.0%	0.0%	0.0%

Table 13: Pearson Correlation Coefficient Between Composite Measure and its Components

Pearson Correlation Coefficient	Discharge Aspirin	Discharge P2Y12 Inhibitors	Discharge Statin
Composite Measure	0.9024	0.7493	0.8684

Table 14: Regression Model

	Logistic Regression Model		Linear Regression Model	
	C	Variance	R-Squared	Variance
Overall		0.04729		0.00494
<i>Explained by</i>				
Aspirin	0.840	0.03163	0.8167	0.00403
P2Y12	0.554	0.00491	0.5540	0.00274
Statin	0.650	0.01367	0.7508	0.00371
All three	1.000	0.04729	0.9106	0.00450

(Patient Stay Level)

(Hospital Level)

Table 15: Exclusions Summary Results

Exclusions	Number of Hospital Stay	Number of Facilities
Initial Sample	6,940,513	1862
Discharges not between July 1 2023 and June 30 2024	5,933,206	154
Remaining	1,007,307	1708
Without PCI during the admission	308,681	20
Remaining	698,626	1688
Discharge Status: not alive	13,281	0
Remaining	685,345	1688
Discharge Location: Other acute care hospital	10,097	0
Remaining	675,248	1688
Discharge to Hospice	2,326	0
Remaining	672,922	1688
Discharge Location: Left against medical advice	3,219	0
Remaining	669,703	1688
Discharge Location: Unknown	44	0
Remaining	669,659	1688
Not eligible to the composite measure	180	0
Study Sample	669,479	1688

6.2.4 Progress on Improvement

Table 16: Trends in Distribution of Performance of Discharge Medications Composite Over Time

Description	1/01/15 - 12/31/16	7/01/21 - 6/30/22	7/01/23 - 6/30/24
N	1633	1667	1688
Mean	93.6%	94.3%	94.5%
Std Deviation	7.2%	6.9%	7.0%
100% Max	100.0%	100.0%	100.0%
99%	100.0%	100.0%	100.0%

95%	99.7%	100.0%	99.8%
90%	99.2%	99.3%	99.3%
75% Q3	98.0%	98.2%	98.2%
50%			
Median	95.8%	96.3%	96.3%
25% Q1	91.9%	92.5%	93.1%
10%	85.2%	87.4%	88.1%
5%	79.9%	83.3%	84.9%
1%	67.6%	70.0%	71.0%
0% Min	25.9%	0.0%	0.0%
