

Attachment B: Tables and Figures for the Timely Follow-Up After Acute Exacerbations of Chronic Conditions (TFU) Measure, CBE #3455, Full Measure Submission, Spring 2024

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Data Sources

This document (Attachment B) includes tables and figures relevant to the Full Measure Submission for the Timely Follow-Up After Acute Exacerbations of Chronic Conditions (TFU Measure), CBE #3455.

As noted in [Section 4.1.1](#) of the submission form, this is a description of data used for testing:

For measure re-specification and testing (feasibility, reliability, validity), we used data from Medicare Fee-for-Service (FFS) Accountable Care Organizations (ACOs) as follows:

- Medicare FFS administrative claims data (Parts A and B), Calendar Year (CY) 2018 claims.
- Medicare beneficiary summary file (MBSF) data, which includes beneficiary enrollment information.

As part of measure reevaluation efforts, and in preparation for CBE measure maintenance review, we performed additional testing (feasibility, reliability, validity) with the following data:

- Medicare FFS administrative claims data (Parts A and B), CY 2021 claims.
- MBSF data, which includes beneficiary enrollment information.

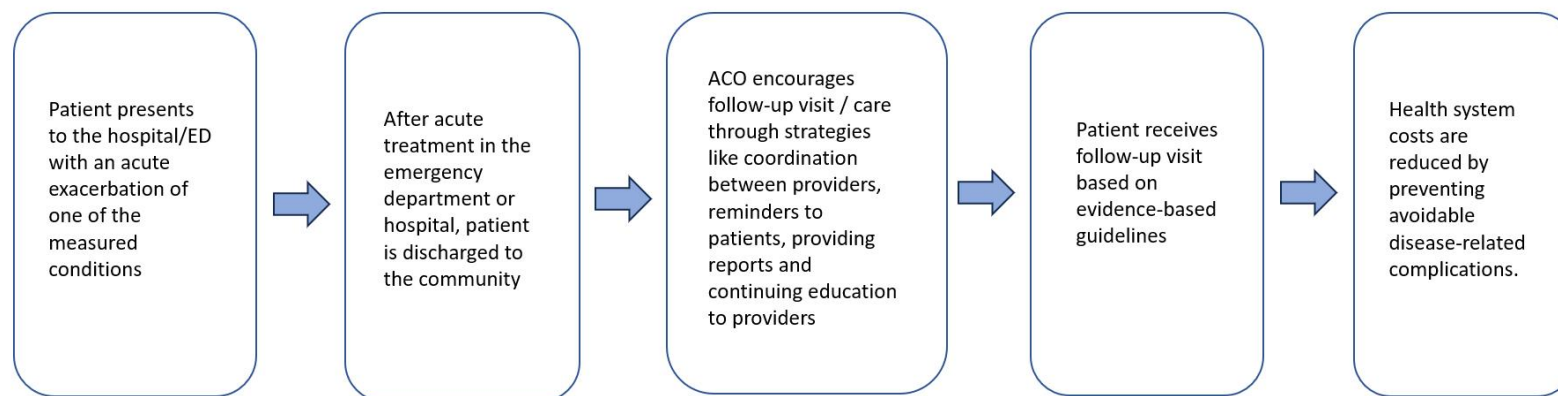
For further detail on feasibility, see [Section 3.1 Feasibility](#) in the submission form. We note that data used for testing the re-specified measure includes all ACOs with attributed beneficiaries.

For any implementation-focused analyses, CMS, and their implementation contractor, RTI International, used Medicare FFS administrative claims data for CY 2022 and CY 2023 to identify acute events and their follow-up for TFU. RTI also uses the enrollment data from the Integrated Data Repository (IDR). For further detail on these analyses please see responses included in [Section 6: Usability](#).

2.1 Logic Model for the Timely Follow-Up Measure

Please see Figure 1: Logic Model. This logic model depicts the process by which the TFU measure incentivizes appropriate follow-up care for patients with the six chronic conditions of interest after being treated for an acute exacerbation. Ideally, this measure will encourage creative local problem solving at the ACO level to ensure that each patient receives appropriate condition-specific care, in addition to encouraging cost savings to the health system overall.

Figure 1: Logic Model for the Timely Follow-Up Measure



2.3 Performance Gap: Table 1 Performance Scores by Decile

Table 1: Timely Follow-Up Performance Scores by Decile

	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Performance Score	77%	36.4%	69%	73%	75%	76%	77%	78%	79%	80%	82%	85%	91%
N of Entities	475	1	47	48	47	48	47	48	48	48	47	47	1
N of Persons / Encounters / Episodes	725,078	118	45,521	56,570	63,608	76,199	108,852	83,224	107,682	63,664	76,643	43,115	1,204

4.1.4 Characteristics of Units of the Eligible Population: Table 2

Table 2. Characteristics of Patients Included in Timely Follow-Up Development Database

Description	Encounters (#) unless otherwise specified	Frequency (%)
All	725,078	100.00
Age: Mean (STD)	74.61 (mean)	11.04
Sex	*	*
Male	356,445	49.16
Female	368,633	50.84
RTI Race	*	*
Unknown	9,732	1.34
White	611,611	84.35
Black	73,978	10.20
Other	8,673	1.20
Asian	8,429	1.16
Hispanic	10,440	1.44
North America Native	2,215	0.31
Condition Groups	*	*
Coronary Artery Disease, high acuity (CAD-H)	105,347	14.53
Diabetes, high acuity (DIAB-H)	69,863	9.64
Congestive Heart Failure (CHF)	215,079	29.66
Asthma (ASM)	28,414	3.92
Hypertension, high acuity (HTN-H)	61,606	8.50
Hypertension, medium acuity (HTN-M)	15,775	2.18
Chronic Obstructive Pulmonary Disease (COPD)	124,210	17.13
Coronary Artery Disease (CAD-L)	104,784	14.45

4.2.3 Reliability Testing Results: Table 3

Table 3: Timely Follow-Up Accountable Entity-Level Reliability Testing Results (Results by decile of reliability)

TFUP													
Description	Overall	Min	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	Max
Mean STNR (Reliability)	0.933	0.658	0.844	0.891	0.908	0.921	0.933	0.944	0.955	0.967	0.978	0.987	0.996
Mean Performance Score	77.4%	36.4%	77.1%	77.7%	76.5%	78.7%	76.7%	78.0%	76.9%	76.8%	77.0%	78.5%	77.1%
Entities	475	1	47	48	47	48	47	48	48	48	47	47	1
Total Admissions	725,078	118	16,264	24,760	27,745	34,567	40,530	49,674	63,482	84,367	130,944	252,745	14,763

4.3.4 Validity Testing Results: Table 4

Table 4: TFU Validity Testing Results

Measure Name	Number of ACOs	CBE Measure Number	Correlation Coefficient	P-Value
All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions	475	#2888	-0.136	0.0029
Diabetes Mellitus: Hemoglobin A1c Poor Control	465	#0059	-.0270	<.0001
Hypertension (HTN): Controlling High Blood Pressure	465	#0018	0.305	<.0001

4.4.3 Risk Factor Characteristics Across Measured Entities: Table 5 and Table 6

Table 5: Risk Factor Characteristics Across Measured Entities (Patient-level distribution of patients with social risk factors)

Variable	Number of Patients in TFU Cohort (n=897,410)	Proportion of Patient in TFU Cohort (%)
Dual Eligible	149,844	16.7%
Low Income (Low AHRQ SES)	190,964	21.3%
Non-White	186,544	20.8%

Table 6: ACO-Level Distribution of Patients with Social Risk Factors (n=610 ACOs)

Variable	Mean	Std Dev	Minimum	Maximum	Median	Q1	Q3
Dual Eligible	17.6%	12.6%	0.0%	84.2%	14.6%	9.3%	22.1%
Low Income (Low AHRQ SES)	22.1%	16.6%	0.0%	87.2%	18.6%	9.3%	30.2%
Non-White	22.0%	16.9%	1.4%	98.8%	17.1%	9.2%	29.8%

4.4.4 Risk Adjustment Modeling and/or Stratification Results: Table 7

See below for Table 7: Proportion of Beneficiaries with Social Risk within Quartiles of TFU Scores. As discussed in Section 5.1 (Equity) and Tables 8 and 9 in this document, measure scores for beneficiaries with social risk factors are lower (worse) at both the patient and ACO level for patients with: dual eligibility (vs. non-dual), low AHRQ SES (vs. non-low AHRQ SES), and non-white (vs. white). For example, at the ACO level, median TFU measure scores for beneficiaries stratified by social risk factor are: dual eligibility vs. non-dual: 70.5% vs. 76.8%; non-white vs white: 70.9% vs. 77.1%; low SES vs. non-low SES: 73.3% vs. 76.3% (Table 6). These analyses used data from CY2018.

Table 7 shows the relationship between measure scores and social risk factors, demonstrating that ACOs with the lowest measure scores have the highest proportion of beneficiaries with social risk (in this case, the ADI variable was used as the income variable), most markedly for the DE variable. These analyses use data from CY2022 and CY 2023.

Table 7: Proportion of Beneficiaries with Social Risk within Quartiles of TFU scores

Quartile of TFU Score	Percent Neighborhood with ADI Percentile >= 81 (ADI)	Percent Dual Eligible (DE)	Percent Non-White (NW)
1 (Lowest Scores)	19.03	41.81	42.55
2	18.12	21.07	26.26
3	14.66	15.56	20.21
4 (Highest Scores)	13.94	9.4	10.57

5.1 Contributions Towards Advancing Health Equity: Table 8 and Table 9

Table 8: Patient-Level Percent Timely Follow-Up by Condition and Social Disparity

COND*	Dual	Non-dual	Abs. Dif.	Female	Male	Abs. Dif.	Non-white	White	Abs. Dif	Low SES	Non-Low SES	Abs. Dif.
CAD-H	42.47%	48.82%	-6.35%	48.13%	48.03%	0.10%	43.48%	49.06%	-5.58%	44.62%	48.93%	-4.31%
DIAB-H	66.43%	73.31%	-6.88%	71.81%	71.76%	0.05%	66.21%	73.82%	-7.61%	68.37%	72.84%	-4.47%
CHF	67.18%	76.71%	-9.53%	74.92%	75.48%	-0.56%	68.58%	77.11%	-8.53%	71.42%	76.23%	-4.81%
ASM	61.43%	70.89%	-9.46%	69.01%	66.13%	2.88%	61.29%	71.54%	-10.25%	62.76%	69.78%	-7.02%
HTN-H	66.64%	75.07%	-8.43%	74.68%	73.03%	1.65%	67.68%	75.97%	-8.29%	70.28%	74.90%	-4.62%
HTN-M	81.24%	84.52%	-3.28%	84.45%	83.45%	1.00%	81.09%	84.75%	-3.66%	82.32%	84.48%	-2.16%
COPD	81.14%	85.79%	-4.65%	85.38%	84.18%	1.20%	80.55%	85.68%	-5.13%	82.66%	85.51%	-2.85%
CAD-L	89.66%	93.22%	-3.56%	93.19%	92.65%	0.54%	91.18%	93.18%	-2.00%	91.82%	93.10%	-1.28%
All	70.14%	76.54%	-6.40%	75.90%	74.98%	0.92%	69.32%	77.08%	-7.76%	72.50%	76.27%	-3.77%

*Key for the condition acronyms: Coronary Artery Disease, high acuity (CAD-H); Diabetes, high acuity (DIAB-H); Congestive Heart Failure (CHF); Asthma (ASM); Hypertension, high acuity (HTN-H); Hypertension, medium acuity (HTN-M); Chronic Obstructive Pulmonary Disease (COPD)

Table 9: ACO-level Percent Timely Follow-Up by Social Disparity

Variable	N	Mean	Std Dev	Std Error	Median	25th Pctl	75th Pctl	10th Pctl	90th Pctl	Minimum	Maximum
Dual	609	70.07%	7.69%	0.31%	70.45%	66.67%	74.62%	61.51%	78.42%	0.00%	100.00%
Non-dual	610	76.27%	4.65%	0.19%	76.80%	73.81%	79.12%	70.58%	81.84%	40.00%	86.92%
Abs. Diff.	609	-6.22%	6.89%	0.28%	-5.53%	-9.16%	-2.58%	-13.69%	1.06%	-79.88%	29.53%
Female	610	75.86%	5.02%	0.20%	76.35%	73.15%	79.18%	70.00%	81.63%	32.88%	88.38%
Male	610	74.85%	5.33%	0.22%	75.45%	72.28%	77.96%	68.75%	80.71%	20.37%	88.66%
Abs. Diff.	610	1.01%	3.37%	0.14%	1.01%	-0.97%	3.04%	-2.99%	5.07%	-26.67%	12.51%
Non-white	610	70.85%	6.98%	0.28%	70.90%	66.97%	75.00%	62.97%	78.99%	24.24%	100.00%
White	610	76.82%	4.46%	0.18%	77.07%	74.66%	79.70%	71.88%	81.92%	28.72%	91.67%
Abs. Diff.	610	-5.97%	5.95%	0.24%	-6.14%	-9.28%	-2.97%	-12.62%	0.80%	-32.92%	33.33%
Low SES	607	72.93%	8.08%	0.33%	73.25%	68.81%	77.04%	64.72%	81.38%	0.00%	100.00%
Non-Low SES	610	75.88%	4.84%	0.20%	76.26%	73.40%	78.76%	70.43%	81.24%	26.47%	86.85%
Abs. Diff.	607	-2.94%	7.11%	0.29%	-2.85%	-5.86%	0.36%	-9.68%	3.70%	-80.79%	24.76%

6.2.4 Progress on Improvement: Table 10 and Table 11

Table 10: Non-Stratified Populations Quarterly Results

Group	CY Year	Qtr	Count	Mean	Std	Min	5%	10%	25%	50%	75%	90%	95%	Max
ACOs	22	1	91	67.26	6.8	44.07	53.93	57.33	65.04	67.98	71.77	75.44	76.35	79.79
ACOs	22	2	91	67.34	6.8	42.79	53.02	58.84	64.55	68.22	71.5	75.23	76.33	78.32
ACOs	22	3	91	67.58	6.72	41.41	55.22	58.75	64.48	68.47	72.65	74.68	75.78	80.6
ACOs	22	4	91	68.31	6.82	40.35	54.16	60.53	65.11	69.43	72.71	75.6	76.17	80.04
ACOs	23	1	118	68.95	6.29	43.73	56.63	59.8	65.68	69.61	73.18	75.6	76.25	84.25
ACOs	23	2	118	69.37	6.06	43.37	58.2	60.58	66.04	70.5	73.57	76.06	76.64	81
ACOs	23	3	118	69.53	6.43	41.38	58.29	61.06	65.84	70.46	74.05	76.97	78.5	80.36
ACOs	23	4	118	70.65	6.25	41.55	60.27	62.46	67.07	71.07	74.72	78.28	79.21	83.46
All Entities	22	1	3455	67.34	9.95	13.28	50.68	56.6	63.41	68.56	73.26	77.64	80.56	92.31
All Entities	22	2	3374	67.43	9.5	10.81	51.63	57.26	63.45	68.52	73.06	77.56	80.38	92.31
All Entities	22	3	3286	67.58	9.21	8.7	52.83	57.63	63.61	68.42	73.13	77.33	80	94.87
All Entities	22	4	3117	68.12	8.94	13.04	53.92	58.47	64.1	69.01	73.45	77.58	80.29	92.59
All Entities	23	1	3264	67.77	10.18	7.55	50.46	57.14	63.84	69.17	73.68	78.08	80.46	95.24
All Entities	23	2	3178	68.2	9.41	10.42	52.42	58.01	64.39	69.39	73.84	77.78	80.52	95.74
All Entities	23	3	3135	68.34	8.99	18	53.7	58.48	64.35	69.23	73.77	78.2	80.47	94.38
All Entities	23	4	2954	69.16	8.57	17.5	55.32	59.96	65.24	69.96	74.46	78.43	81.03	90.91
Non-ACOs	22	1	3364	67.34	10.02	13.28	50.61	56.59	63.38	68.59	73.33	77.73	80.66	92.31
Non-ACOs	22	2	3283	67.44	9.57	10.81	51.62	57.21	63.42	68.57	73.08	77.64	80.46	92.31
Non-ACOs	22	3	3195	67.58	9.28	8.7	52.72	57.6	63.59	68.42	73.17	77.46	80.06	94.87
Non-ACOs	22	4	3026	68.11	8.99	13.04	53.93	58.43	64.1	69.01	73.46	77.63	80.39	92.59
Non-ACOs	23	1	3146	67.72	10.29	7.55	50	57.07	63.79	69.16	73.71	78.23	80.59	95.24
Non-ACOs	23	2	3060	68.15	9.52	10.42	51.94	57.89	64.29	69.32	73.84	77.89	80.6	95.74
Non-ACOs	23	3	3017	68.29	9.07	18	53.12	58.39	64.26	69.17	73.77	78.24	80.71	94.38
Non-ACOs	23	4	2836	69.1	8.65	17.5	55.21	59.76	65.17	69.88	74.45	78.46	81.15	90.91

Table 11: Stratified Populations Quarterly Results

Group	CY Year	Calendar Quarter	Count	Mean	Median	Min	Max
High-ADI >= 20	22	1	70	66.07	67.11	44.76	87.88
High-ADI >= 20	22	2	69	66.04	65.52	44.97	83.33
High-ADI >= 20	22	3	69	65.81	65.86	43.80	83.33
High-ADI >= 20	22	4	69	67.73	68.93	40.74	84.06
High-ADI >= 20	23	1	95	67.27	67.77	45.71	87.50
High-ADI >= 20	23	2	94	67.45	67.18	44.44	88.89
High-ADI >= 20	23	3	93	67.63	68.38	47.06	90.48
High-ADI >= 20	23	4	92	68.45	69.73	39.13	85.92
Dual eligible >= 20	22	1	88	60.14	59.79	38.96	79.17
Dual eligible >= 20	22	2	85	59.40	60.32	36.84	74.29
Dual eligible >= 20	22	3	87	59.58	60.10	34.17	76.74
Dual eligible >= 20	22	4	85	60.37	61.22	38.11	75.61
Dual eligible >= 20	23	1	108	60.89	61.57	41.30	78.67
Dual eligible >= 20	23	2	108	61.56	61.12	42.19	82.61
Dual eligible >= 20	23	3	107	61.80	61.21	43.97	81.58
Dual eligible >= 20	23	4	106	63.79	63.67	44.04	82.50
Non-white >= 20	22	1	88	62.68	62.33	44.22	83.33
Non-white >= 20	22	2	88	62.39	62.50	42.72	85.19
Non-white >= 20	22	3	88	62.36	62.36	41.59	79.59
Non-white >= 20	22	4	88	63.60	63.51	40.57	81.90
Non-white >= 20	23	1	112	63.57	63.53	43.39	86.67
Non-white >= 20	23	2	111	64.12	64.37	42.86	82.76
Non-white >= 20	23	3	112	64.35	63.83	41.34	86.21
Non-white >= 20	23	4	112	65.64	65.08	41.58	84.81