Healthcare Quality Performance

Diabetes Screening for People With Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications

Patterns of Utilization - 2019 Measurement Year

CMS Qualified Entity (QE) Program
Public Report

November 14, 2022

Who We Are

Komodo Health is a technology company with a mission of reducing the burden of disease. We combine an in-depth view of patient encounters with innovative algorithms and decades of clinical expertise to power our Healthcare Map™, one of the most robust and representative views of the U.S. healthcare system. Using our Healthcare Map, we offer a suite of powerful software applications that enable healthcare industry stakeholders to understand how healthcare is currently delivered and identify high-value interventions that can improve cost-effectiveness, clinical effectiveness, or equitability.

What Is the Purpose of *This* Report?

Komodo Health uses data to measure and quantify healthcare processes in the United States. Komodo focuses specifically on the ***effectiveness of*** and ***equity of access*** to high-quality and evidence-based healthcare and provides stakeholders with additional and potentially actionable insights relating to variations in quality or effectiveness of care. Komodo Health uses a combination of standard process and outcome measures developed and endorsed by experts over the past decade, and novel/alternative methods that we have been developing to measure and quantify variations in healthcare processes that may impact clinical effectiveness, efficiency, or outcomes for patients. This report presents a summary of our findings on access to/use of specific evidence-based screening practices in 2019 using a standard process measure endorsed by the National Quality Forum.

What Are We Measuring?

Komodo measures and quantifies the extent to which patients in the United States are receiving recommended pharmacological (medication) therapies for chronic and debilitating conditions, and whether they also are being monitored for specific side effects or risks relating to the use of these medication therapies. For this report, Komodo used a Healthcare Effectiveness Data and Information Set (HEDIS®) standard measure that was developed by experts and is endorsed by the National Quality Forum, and is initially reporting on **Measurement Year 2019**. The HEDIS® standard measure included in this report is:

- **NQF 1932:**
  Diabetes Screening for People With Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications (SSD)

Why Is This Measure Important?

Individuals with schizophrenia or bipolar disorder have a higher risk for developing type 2 diabetes mellitus (T2DM) compared to the general population. A combination of factors drives this risk:

- Patient use of specific medications (atypical antipsychotic agents) used to manage symptoms. These agents can disrupt normal serum glucose control.
- Increased likelihood of unhealthy lifestyles
- Reduced access to consistent and effective preventative health services

The T2DM risk and its contribution to increased cardiovascular risk means that, as a group, patients with schizophrenia or bipolar disorder can experience a shorter life expectancy of 10–20 years compared to the general population. Routine screening for T2DM and other cardiovascular risk is an essential foundation for identifying and managing risk in an effort to improve long-term physical health outcomes for patients with serious mental illness.

Despite long-standing evidence of metabolic health risks associated with the use of antipsychotic medications, up to two-thirds of patients who are prescribed these medications do not receive annual screening for diabetes and other metabolic disorders. Moreover, there is growing evidence that screening rates vary systematically by geographical region of the country and by the type of health insurance or healthcare benefit plan in which a patient is enrolled (e.g., public vs. private healthcare benefit, indemnity vs. managed care). Structural issues relating to the coordination of physical and behavioral health service delivery also influence the consistency of screening. For example, when a patient receives their medical care in one clinic and their psychiatric care in a different clinic, and the two clinics do not coordinate care or share medical records, providers may miss preventative screening opportunities.

These issues underscore the need for continuous measurement of performance and analysis in order to detect and/or monitor variations. Performance also should be measured and compared on a state-by-state, region-by-region, and insurance-type basis.

What Data Did We Use for Measurement?

Komodo combined its internal data sources with the Centers for Medicare & Medicaid Services (CMS) Medicare Fee-For-Service dataset. This enabled us to evaluate and measure processes of care across a diverse group of patients. We also were able to look for differences in how care is delivered to patients depending on where a patient lives and whether they enrolled in a private insurance plan (Commercial), the Medicaid program, or the Medicare program.

Komodo Health's substantial all-payer data assets provided us with a sufficiently large population of eligible patients so that we were able to measure screening rates at the national, regional, and local levels, stratified by health plan enrollment category and by rural/urban residency using guidelines established by the Federal Office of Rural Health Policy. The following is a list of U.S. states in which Komodo's combined data produced eligible or relevant patient population cohorts of sufficient size to support measure calculation and reporting:

AK, AL, AR, AZ, CA, CO, CT, DC, DE, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SC, SD, TN, TX, UT, VA, VT, WA, WI, WV, WY

Changes to Last Year's Analysis

- Komodo Health previously included U.S. territories in the analysis. This year's report is limited to U.S. states.
- Komodo Health has incorporated a subanalysis of performance with the eligible population stratified using the U.S. Office of Management and Budget (OMB) race and ethnicity categories

How Is the Measure Calculated?

Komodo applied the standard HEDIS® measure specification to patients enrolled in any of the following types of health insurance categories: Commercial, Medicaid Managed Care, Medicaid-Medicare Dual, Medicare Advantage, and Medicare Fee-for-Service. Table 1 briefly summarizes the numerator, the denominator, and the exclusions that were applied prior to calculating screening rates. See **Appendix 1** for full details of the HEDIS® measure specifications. Compared to Measurement Year 2018, there are no significant changes to the numerator or denominator definitions for **Measurement Year 2019 (MY2019)**.

Komodo used a combination of enrollment and claims data to assign each patient to a health insurance category. For this analysis, the Commercial-Private category represents a mix of traditional indemnity insurance and managed care product types including PPO, HMO, and EPO. It includes employer-sponsored health plans and qualified health plans available through a state or federal health insurance exchange. The Medicaid-Medicare Dual category represents the program for individuals concurrently ("dually") eligible for Medicare and Medicaid. Medicaid Managed Care, Medicaid-Medicare Dual, and Medicare Advantage are programs in which services are provided under a managed care payment model. Finally, the Medicare Fee-for-Service category represents the traditional Medicare in which services are not provided under a managed care payment model. The Medicare Advantage category excludes Special Needs Plans or SNPs; all patients enrolled in SNPs were assigned to the Medicaid-Medicare category.

If a patient changed health insurance categories during the measurement year, Komodo assigned them to the health insurance category that was active on the date of the first prescription fill event for the antipsychotic medication. If a patient was concurrently enrolled in Medicare and a commercial supplemental benefit, Komodo assigned that patient to their Medicare category (either Medicare Advantage or Medicare Fee-for-Service). If a patient was enrolled in Medicare for medical coverage but concurrently was participating in the Retiree Drug Subsidy (RDS) Program, Komodo assigned that patient to their Medicare category. Komodo assigned each patient in the eligible population exclusively to one state or territory based on their state of residence in January of the

measurement year. If the patient's residential state or territory could not be confirmed via an enrollment file, Komodo assigned the patient to the prescriber's state or territory.

Table 1. Summary of inclusion and exclusion criteria. See Appendix 1 for full details of measure specification.

Measure Description	The percentage of adult beneficiaries with schizophrenia or bipolar disorder who were dispensed an antipsychotic medication and had a diabetes screening test during the measurement year.
NQF Status	• NQF-Endorsed • Measure ID 1932 • Process Measure Type • **Measurement Year 2019**
Denominator (eligible population)	• All patients 18 years or older ***and*** • Continuously enrolled in a medical and prescription drug health benefit (private or public insurance plan) ***and*** • Diagnosed with schizophrenia or bipolar disorder
Numerator	Patients in the eligible population who had at least one glucose test or an HbA1c test performed during the measurement year, as identified by claim/encounter or automated laboratory data.
Exclusions	• Exclude all patients with existing diagnosis of diabetes • Exclude all patients who were dispensed insulin or oral hypoglycemics/antihyperglycemics

What Did We Discover?

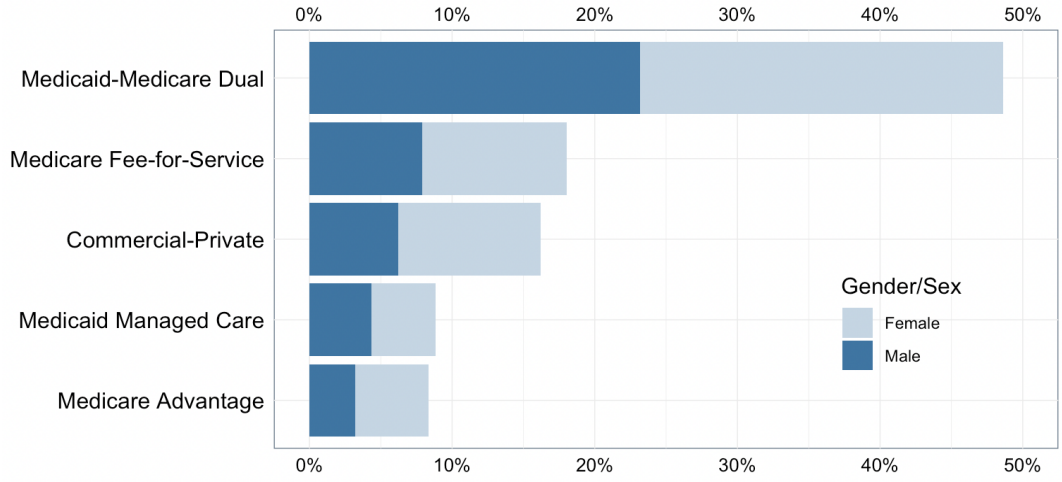
Population Overview and Demographics

After applying all inclusion and exclusion criteria, Komodo's Healthcare Map yielded 1,299,675 adult patient cases that met the denominator definition and could be evaluated for diabetes screening for **Measurement Year 2019**. This compares to 1,623,901 cases identified in Measurement Year 2018. As was the case for the prior measurement year, in this 2019 report, we refer to these 1,299,675 adult patient cases meeting the eligibility inclusion criteria as the *eligible population*. The female-to-male sex/gender ratios observed in the measurement population were slightly biased toward females overall and also within in each of the Commercial, Medicaid Managed Care, Medicare Advantage and Medicare Fee-for-Service categories. The mean and median ages of the individuals in the eligible population varied as a function of the health insurance coverage category as is summarized in Table 2. Patients in the Commercial-Private and Medicaid Managed Care categories were younger, with a mean age of 40.5 years and 38.7 years, respectively. Patients in the Medicaid-Medicare Dual category, Medicare Advantage, and Medicare Fee-for-Service categories were older.

Table 2. Demographics of the eligible population for MY2019, segmented by health insurance coverage category.

Health Insurance Category	Eligible	Mean Age	Median Age	Percent Female	Percent Male
Commercial-Private	210,496	37.6	36	61.54%	38.46%
Medicaid Managed Care	114,798	37.8	36	50.76%	49.24%
Medicaid-Medicare Dual	631,868	49.0	49	52.34%	47.66%
Medicare Advantage	108,185	57.7	59	61.30%	38.70%
Medicare Fee-for-Service	234,328	57.2	58	56.29%	43.71%

Figure 1. Patients in Medicaid-Medicare Dual healthcare coverage category represented the largest cohort when the measure population was segmented by category of insurance coverage. Across all insurance categories, a significantly larger percentage of patients meeting the inclusion criteria were female.



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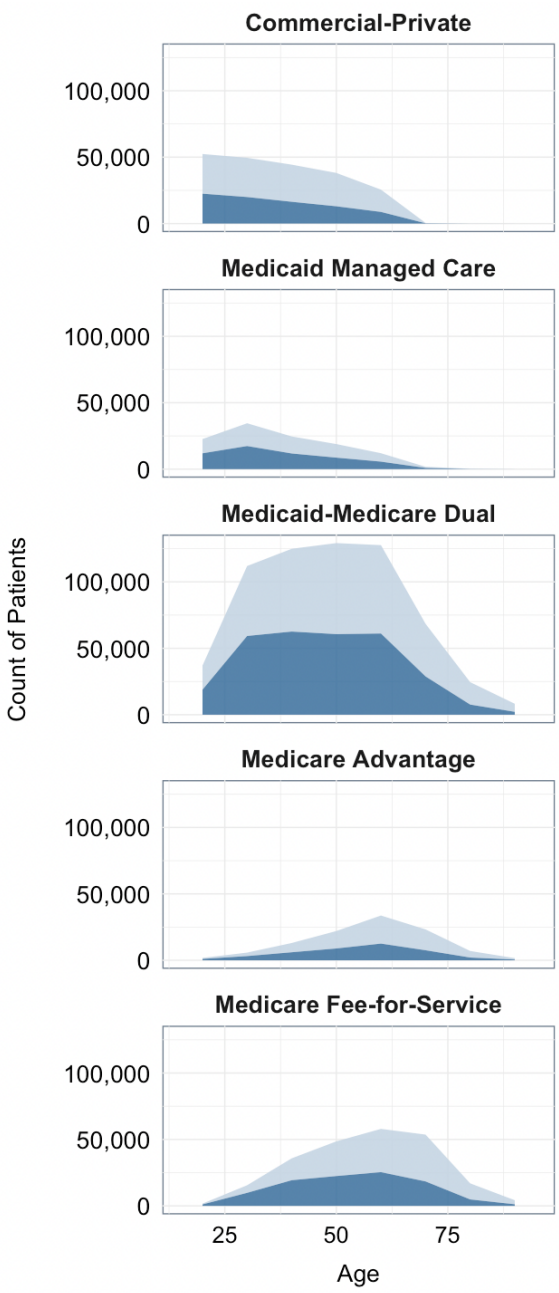

Figure 2. Frequency distribution of patient ages in the eligible population, segmented by health insurance coverage category.

Age inclusion criteria create an abrupt left-sided cutoff at 18 years and a right-sided cutoff at 89 years.

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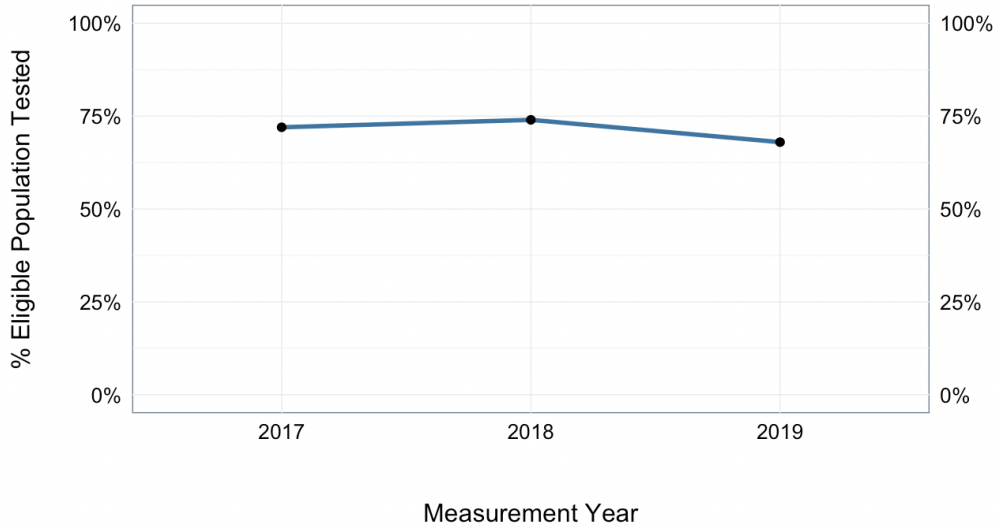
Variations in Screening Rates Based on Health Insurance Category

For Measurement Year 2019, Komodo found that approximately 68% of patients with schizophrenia or bipolar disorder who were prescribed atypical antipsychotics were screened for diabetes sometime during the measurement year.[1] This reflects a 6% *decrease* in the overall rate of diabetes screening in the at-risk population compared to Measurement Year 2018, and is a modest but statistically significant difference.[2] Overall rates remain within a narrow range.

Figure 3. Three-year screening trends. Rates of screening for eligible populations vary year-to-year but fall within a relatively narrow range.



Among eligible patients for whom there was no evidence of diabetes screening, 88.9% had been dispensed atypical antipsychotic agents only; 6.5% had been dispensed a combination of atypical and conventional antipsychotic agents; 4.6% had been dispensed conventional antipsychotic agents only. The cohort of patients for which there was evidence of diabetes screening was similar with respect to exposure to the atypical antipsychotic agents: 86.2% had been dispensed atypical antipsychotic agents only; 8.8% had been dispensed a combination of atypical and conventional antipsychotic agents; 4.8% had been dispensed conventional antipsychotic agents only. These patterns are nearly identical to those of Measurement Year 2018.

While the overall rate of screening for diabetes was relatively high, screening rates varied significantly depending on the category of health insurance coverage that a patient had. Moreover, the relationship between screening rates and a specific category of health insurance coverage has

[1] Per the measure specification, all patients who had a diagnosis of diabetes 1 year prior to or during the 1-year measurement period were excluded from the analysis.
[2] Difference in MY2018 rate and MY2019 rate is statistically highly significant with $p < 0.001$ using a two-proportions *z*-test. We can conclude that the proportion of eligible patients who were screened is significantly different between the two years (significantly lower in MY2019).

not been consistent from year-to-year. Results for Measurement Year 2019 are summarized in Table 3 and Figure 4 below. Compared to 2018, screening rates remained flat for the Medicare FFS population and increased slightly for the Medicare Advantage population. At the same time, rates decreased for the Commercial-Private, Medicaid Managed Care, and Medicaid-Medicare Dual populations.

Table 3. Summary results of HbA1C testing rates in patients with schizophrenia or bipolar disorder who were prescribed antipsychotic agents. Results are for **Measurement Year 2019**.

Health Insurance Category	Eligible	Screened	Percent (%)	Proportion	Lower Limit	Upper Limit	Change from 2017
Commercial-Private	210,496	122,400	58.1%	0.5815	0.5794	0.5836	↓
Medicaid Managed Care	114,798	55,737	48.6%	0.4855	0.4826	0.4884	↓
Medicaid-Medicare Dual	631,919	453,010	71.7%	0.7169	0.7158	0.7180	↓
Medicare Advantage	108,210	61,365	56.7%	0.5671	0.5641	0.5700	↑
Medicare FFS	234,374	192,190	82.0%	0.8200	0.8185	0.8216	↔

Table Note:
* Confidence intervals (CIs) = 0.95 for proportions computed using Clopper–Pearson interval method.

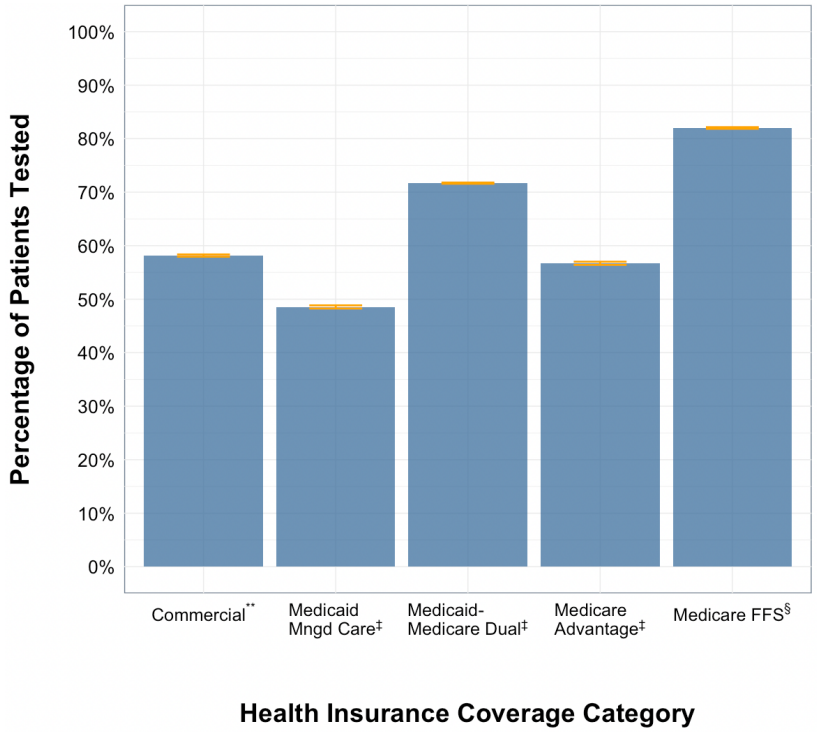


Figure 4. Graphic representation of Table 3 results. HbA1C testing rates for Measurement Year 2019. Orange bars represent confidence intervals.

Notes: See additional report details associated with Table 2.
** Signifies a mix of indemnity and managed care product types, including PPO, HMO, and EPO.
‡ Signifies exclusively a managed care product type.
§ Signifies exclusively indemnity product type (not managed care).

In order to estimate the strength of the association between health insurance category and screening and to determine if the variations that we observed were statistically significant, we performed additional analysis. We treated the Medicaid Managed Care category (lowest rates of screening) as our base reference and did a pairwise comparison of the probability of being screened for diabetes. This pairwise analysis is referred to as the *relative risk* or *risk ratio* and is defined as the ratio of the probability of a specific outcome in one group compared to another group. It attempts to answer the following specific questions:

> *Compared to patients in the Medicaid Managed Care category, how much more likely were patients to receive diabetes screening if they were in each of the following groups:*
>
> - *Medicare Advantage*
> - *Commercial-Private*
> - *Medicaid-Medicare Dual*
> - *Medicare Fee-for-Service*

Although the use of the term *risk* might suggest that the event or outcome is harmful or undesirable, in this case, the event of interest is successful screening for diabetes. As summarized in Table 4, we found that patients enrolled in a Medicare Fee-for-Service plan were 1.7 times more likely to be screened for diabetes than patients enrolled in the Medicaid Managed Care insurance plans represented in our Komodo Health all-payer data map; patients enrolled in a Medicare Advantage plan, Commercial health plan, or Medicaid-Medicare Dual plan were 1.2 to 1.5 times more likely to be screened for diabetes than patients enrolled in a Medicare Advantage health plan.

Table 4. Risk ratio of diabetes screening comparing Medicaid Managed Care vs. each of the other coverage categories. Refer to text for detailed explanation and interpretation of risk ratios. Using Medicaid Managed Care as a baseline, all differences between were statistically highly significant with $p < 0.001$.

Health Insurance Category	Risk Ratio Estimate	Lower Limit	Upper Limit	Confidence Level *
Medicaid Managed Care	1	*NA*	*NA*	0.95
Medicare Advantage	1.1680 ‡	1.1588	1.1773	0.95
Commercial-Private	1.1976 ‡	1.1893	1.2060	0.95
Medicaid-Medicare Dual	1.4765 ‡	1.4675	1.4856	0.95
Medicare Fee-for-Service	1.6889 ‡	1.6784	1.6995	0.95

‡ Difference is statistically significant with p-value < 0.001. Test statistic is a z-score (z) defined by the following equation: *z = (p1 - p2) / SE* and used to compare two observed proportions.

Variations in Screening Rates Based on OMB Race and Ethnicity Category

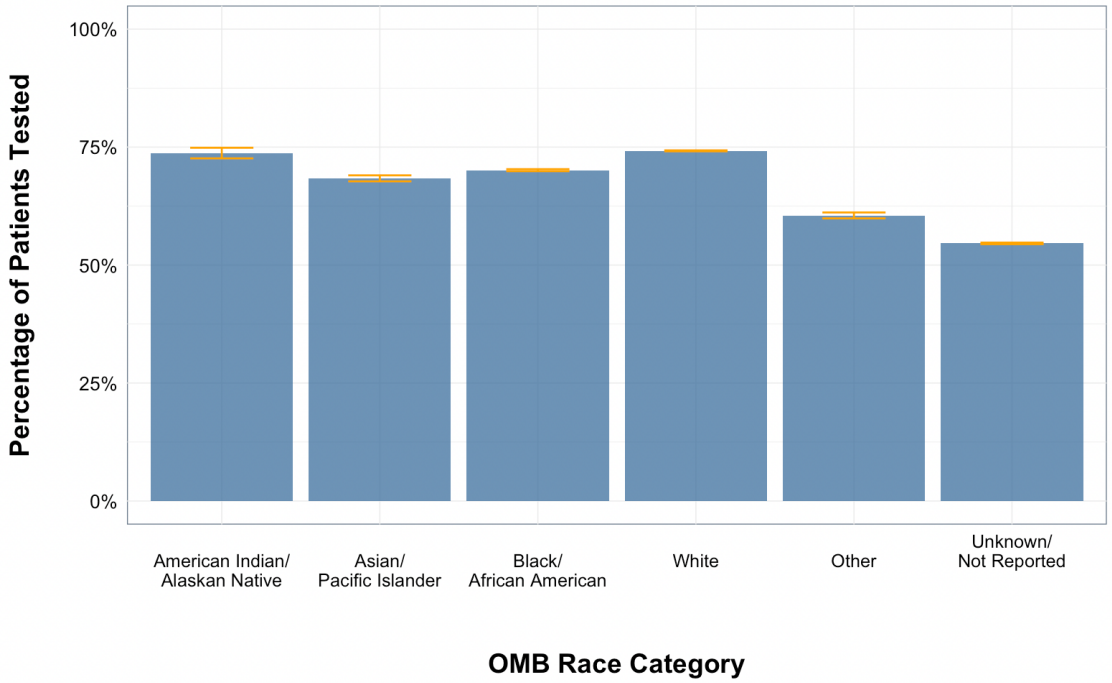
For Measurement Year 2019, Komodo reexamined screening rates by race and ethnicity categories. Komodo data had a reliable OMB race assignment on approximately 73% of the total eligible population and a reliable OMB ethnicity assignment on approximately 51% of the total eligible

population. We found raw screening rates highest among the White and American Indian/Alaska Native cohorts at ~74%, and lowest in the cohort for which Komodo did not have a reliable race assignment. Screening rates were also low in the Other category, which is considered by OMB the equivalent of a "multiracial" category.[3]

Table 5. Summary results of HbA1C testing raw rates by OMB race category for patients with schizophrenia or bipolar disorder who were prescribed antipsychotic agents. Results are for **Measurement Year 2019**.

OMB Race Category	Eligible	Screened	Percent (%)	Proportion	Lower Limit	Upper Limit
American Indian/Alaska Native	5,979	4,409	73.7%	0.7374	0.7261	0.7485
Asian/Pacific Islander	20,577	14,070	68.4%	0.6838	0.6774	0.6901
Black/African American	180,470	126,524	70.1%	0.7011	0.6990	0.7032
White	722,382	536,045	74.2%	0.7421	0.7410	0.7431
Other	23,829	14,421	60.5%	0.6052	0.5989	0.611
Unknown or Unreported	346,438	189,124	54.6%	0.5459	0.5443	0.5476

Figure 5. Graphic representation of Table 5 results. HbA1C testing raw rates by OMB race category for Measurement Year 2019. Orange bars represent confidence intervals.



[3] See Federal Register Document 2016-23672 "Standards for Maintaining, Collecting, and Presenting Federal Data on Race and Ethnicity" for additional details.

Table 6. Risk ratio of diabetes screening comparing Other/Multiracial category vs. each of the other OMB race categories. Refer to text for detailed explanation and interpretation of risk ratios. Using Other/Multiracial as a baseline, all differences were statistically significant with $p < 0.05$.

Health Insurance Category	Risk Ratio Estimate	Lower Limit	Upper Limit	Confidence Level *
Other	1	*NA*	*NA*	0.95
Asian/Pacific Islander	1.1299 ‡	1.1143	1.1456	0.95
Black/African American	1.1585 ‡	1.1461	1.1709	0.95
American Indian/Alaska Native	1.2185 ‡	1.1964	1.2410	0.95
White	1.2262 ‡	1.2135	1.2389	0.95

‡ Difference is statistically significant with p-value < 0.001. Test statistic is a z-score (z) defined by the following equation: *z = (p1 - p2) / SE* and used to compare two observed proportions.

As with the screening variation in the health insurance category, we performed additional analysis to estimate the strength of the association between race and screening and determine if the variations that we observed were statistically significant. We excluded the cases in the Unknown/Unreported category and treated Other as the category with the lowest rate of screening by race as our base reference and did a pairwise comparison of the probability of being screened for diabetes. As summarized in Table 6, we found that patients in all other categories were slightly more likely to be screened for diabetes than patients in the Other/Multiracial category.

In examining screening rates by ethnic category, Komodo also identified a slightly higher raw screening rate in the Hispanic or Latino cohort compared to those identified as Not Hispanic or Latino. However, the risk ratio suggests that the cohort of patients recorded as Hispanic/Latino were equally likely to be screened as the cohort recorded as Not Hispanic/Latino (risk ratio of 1.03).

Importantly, approximately 49% of the eligible population did not have a reliable OMB ethnicity assignment despite the presence of a race assignment. Results for the ethnicity analysis are summarized in Table 7 and Figure 6.

Table 7. Summary results of HbA1C testing rates by OMB ethnic category for patients with schizophrenia or bipolar disorder who were prescribed antipsychotic agents. Results are for **Measurement Year 2019**.

OMB Ethnic Category	Eligible	Screened	Percent (%)	Proportion	Lower Limit	Upper Limit
Hispanic or Latino	93,807	65,624	70.0%	0.6996	0.6966	0.7025
Not Hispanic or Latino	567,692	409,947	72.2%	0.7221	0.7210	0.7233
Unknown or Unreported	638,176	409,022	64.1%	0.6409	0.6397	0.6421

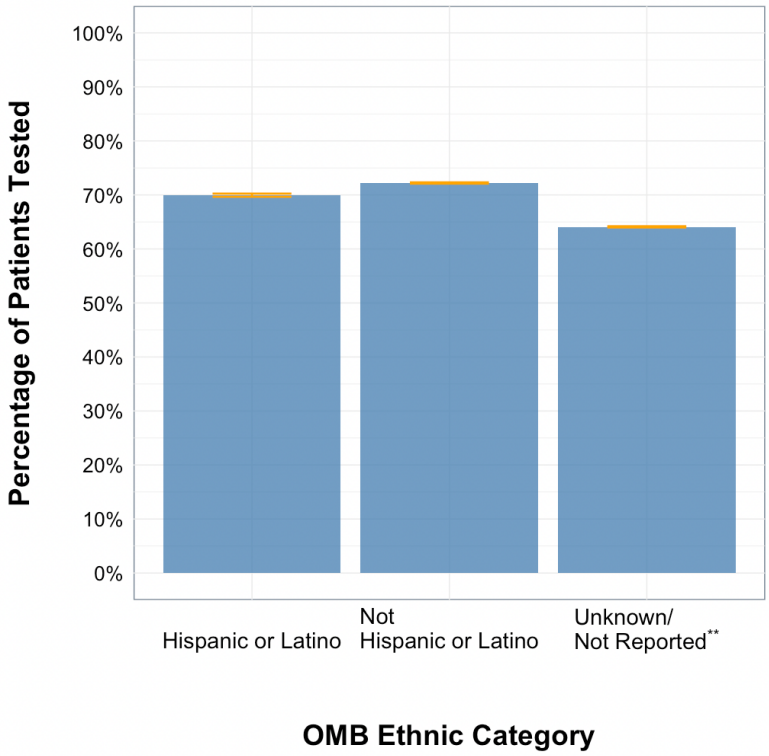


Figure 6. Graphic representation of Table 6. HbA1C testing rates by OMB race category for Measurement Year 2019. Orange bars represent confidence intervals.

** Individuals in the eligible population for whom there was no reliable OMB ethnic category assignment were aggregated into Unknown/Not Reported.

Variations in Screening Rates Based on State or Territory of Residence

Screening rates also varied significantly depending on a patient's State/District of residence. As noted above, beginning in Measurement Year 2019, Komodo Health is excluding data from territories such as Guam, Virgin Islands, Marshall Islands and Puerto Rico. Data from the District of Columbia and the 50 states are included. After uniquely assigning each patient to one and only one state or territory of residence, Komodo grouped patients from all health insurance categories together[4] and recalculated screening rates for each State and the District of Columbia. We observed a 33.4% difference between the state with the highest screening rate (South Dakota) and the state with the lowest screening rate (Rhode Island). We determined that sample size for each state and territory was sufficiently large to detect significant differences in proportion using methods of Fleiss, Tytun, and Ury. Results are summarized in Figures 7 and 8 below. Rates for each state are summarized in Table 8.

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[4] A set of patients grouped together from all health insurance categories is referred to as an *all payer* cohort.

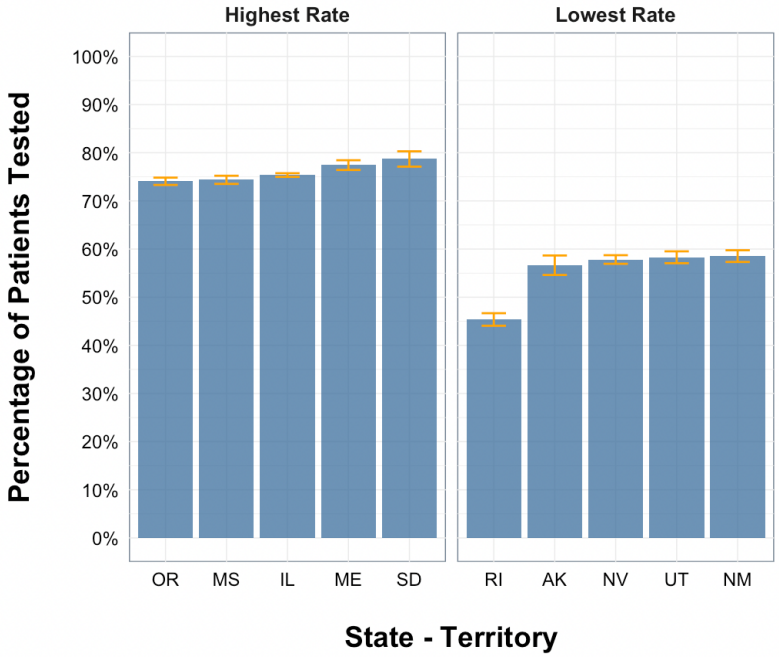
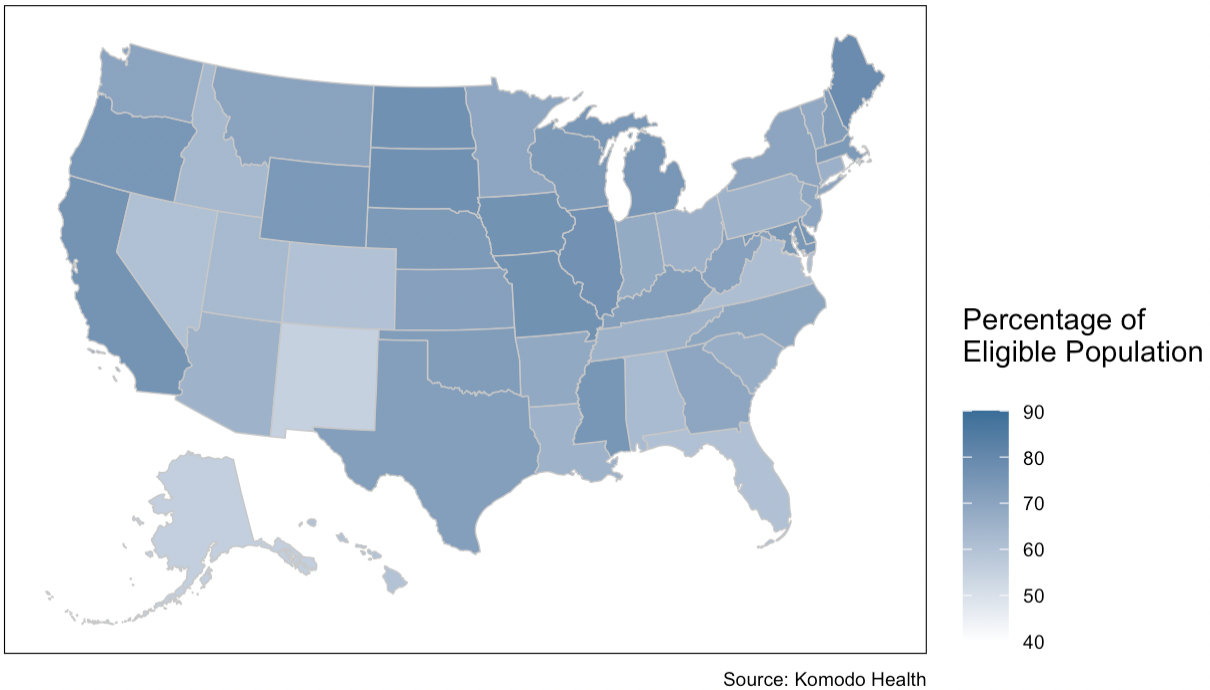


Figure 7. Graphic representation of HbA1C testing rates by State/District. Patients from all health insurance categories were aggregated. The five states with the highest screening rates are compared to the five states-territories with lowest screening rates. Orange bars represent confidence.

Figure 8. Heatmap representation of HbA1C testing rates by State/District. Patients from all health insurance categories were aggregated. Power and sample size for each state were assessed retrospectively and determined to be sufficiently large to detect significant differences in proportion



Source: Komodo Health

Table 8: Complete list of HbA1C testing rates by State/District. Patients from all health insurance categories were aggregated. Cohort size from U.S. territories was not sufficiently powered to support analysis. Results for **Measurement Year 2019.**

State - Territory	Screening Rate *	State - Territory	Screening Rate	State - Territory	Screening Rate
Alaska	56.65%	Louisiana	66.98%	Oklahoma	71.69%
Alabama	68.37%	Massachusetts	70.37%	Oregon	74.08%
Arkansas	68.79%	Maryland	71.29%	Pennsylvania	64.95%
Arizona	63.90%	Maine	77.45%	Rhode Island	45.37%
California	72.42%	Michigan	72.30%	South Carolina	68.27%
Colorado	58.89%	Minnesota	67.54%	South Dakota	78.74%
Connecticut	63.75%	Missouri	72.68%	Tennessee	68.62%
District of Columbia	60.54%	Mississippi	74.38%	Texas	71.19%
Delaware	70.47%	Montana	70.18%	Utah	58.30%
Florida	64.12%	North Carolina	67.92%	Virginia	60.92%
Georgia	68.40%	North Dakota	68.61%	Vermont	68.69%
Hawaii	61.70%	Nebraska	70.34%	Washington	70.00%
Iowa	73.60%	New Hampshire	68.44%	Wisconsin	71.37%
Idaho	62.45%	New Jersey	66.88%	West Virginia	72.69%
Illinois	75.37%	New Mexico	58.54%	Wyoming	67.98%
Indiana	65.48%	Nevada	57.83%		
Kansas	70.44%	New York	67.51%		
Kentucky	72.21%	Ohio	63.92%		

Discussion of Findings

Komodo Health uses its comprehensive all-payer data assets to measure important indicators of clinical effectiveness, cost-effectiveness, and equity of access to high-quality and evidence-based healthcare across a diverse set of patients, providers, and healthcare systems. Our objectives are to provide stakeholders with additional and potentially actionable insights relating to variations in quality or effectiveness of care. In the analysis reported here, we evaluated Diabetes Screening for People With Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications (SSD), an important indicator of quality and the use of evidence-based healthcare processes for patients with serious and chronic behavioral health conditions. Three factors enabled us to conduct comparative analysis and detect important variations across regions and payer types. First, Komodo was able to evaluate a relatively large number of patients for whom we had a complete longitudinal record of clinical encounters and prescription drug use. Second, the number of evaluable patients in each of the Commercial, Medicaid, and Medicare health insurance coverage categories was sufficiently large that the results of the payer-segmented analysis were statistically supported. Finally, the national coverage was complete and the number of evaluable patients in each of the individual states and the District of Columbia was sufficiently large that the results of the state-segmented analysis were statistically supported.

As with prior years' analyses, we continue to observe a higher female-to-male sex/gender ratio in the eligible population in Measurement Year 2019. As has been discussed in prior years, the higher female-to-male sex/gender ratio may reflect a higher rate of continuous enrollment and consistent use of mental health services in the female population with serious mental illness (SMI). Because this specific measure revolves around patients diagnosed with schizophrenia or bipolar disorder, there also are clinical and epidemiological factors that might influence female-to-male sex/gender ratios in the final denominator population. Within the schizophrenia diagnosis category, a second peak onset in females around the age of 45 years may contribute to a slightly higher female-to-male ratio in the older Medicare population.

With respect to diabetes screening trends for the SMI population, overall rates for the population evaluated by Komodo have fluctuated in the 68 - 74% range for several years using the administrative data calculation method. These reported rates suggest that there remain a substantial number of patients who are at-risk for hyperglycemia and diabetes mellitus by virtue of their exposure to atypical antipsychotics, but are not being screened. It is possible a subset of the patients for whom administrative data does not reveal diabetes screening may be undergoing screening in the ambulatory setting using point-of-care (POC) diabetes screening technologies without administrative coding. Alternatively, the rates may reflect an actual "clinical evidence-practice" gap in health care services for the SMI population. Patients with serious mental illness have complex social, medical, and psychological service needs. In recent years, public health insurance authorities have attempted to implement programmatic and structural changes in an effort to deliver more integrated care to these populations. Despite these efforts, overall

management of the needs of these patients often remains fragmented or distributed across a wide range of providers, programs and agencies. Effective and consistent screening for at-risk patients requires coordination between providers who initiate pharmacological therapy and those who are primarily managing their physical health and preventative care needs. Komodo Health has identified the need to examine more extensively the relationship in this eligible population between diabetes screening rates and the following:

- Size and cohesiveness of a patient's management team
    - Is the prescriber also managing the patient's physical health and preventative care?
    - Are there multiple prescribers?
- Rates of other preventative screening activities
- Overall duration of antipsychotic therapy
    - Do screening efforts drop off after a period of negative screening?
    - Are patients consistently screened or monitored for diabetes when antipsychotic agents are used for short-term symptom control in bipolar disorder?

One important finding in Measurement Year 2019 is relatively consistent screening rates across racial and ethnic groups. While there is variation in the raw rates of screening, the overall risk of non-screening was only slightly higher in the group of patients who were designated as Other, an OMB category that is often interpreted administratively as the equivalent of multiracial. Komodo introduced this subanalysis in Measurement Year 2019, and will continue to monitor in subsequent years.

References

Diabetes Screening and Antipsychotic Medications

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Appendix 1: HEDIS® measure specifications

Standard Measure 2:
Diabetes Screening for People With Schizophrenia or Bipolar Disorder Who Are Using Antipsychotic Medications (SSD)

NQF ENDORSEMENT STATUS: NQF-Endorsed
NQF ID: 1932
MEASURE TYPE: Process

Measure Description	
The percentage of members 18–64 years of age with schizophrenia or bipolar disorder who were dispensed an antipsychotic medication and had a diabetes screening test during the measurement year	
Measurement Period (Year in which utilization events occurred)	
2019	
Eligible Population	
Product lines	Medicaid (Komodo will also compute the measure on Commercial and Medicare and report each product line separately).
Ages	18 years and older as of December 31 of the measurement year.
Continuous enrollment	The measurement year.
Allowable gap	No more than one gap in enrollment of up to 45 days during the measurement year. To determine continuous enrollment for a Medicaid beneficiary for whom enrollment is verified monthly, the member may not have more than a 1-month gap in coverage (i.e., a member whose coverage lapses for 2 months [60 days] is not considered continuously enrolled).
Anchor date	December 31 of the measurement year.
Benefits	Medical and pharmacy.
Event/ diagnosis	***Step 1:*** Identify members with schizophrenia or bipolar disorder as those who met at least one of the following criteria during the measurement year. ● At least one acute inpatient encounter, with any diagnosis of schizophrenia or bipolar disorder. Any of the following code combinations meet criteria: – HEDIS BH Stand Alone Acute Inpatient Value Set ***with*** HEDIS Schizophrenia Value Set.

- HEDIS BH Stand Alone Acute Inpatient Value Set ***with*** HEDIS Bipolar Disorder Value Set.
- HEDIS BH Stand Alone Acute Inpatient Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.
- HEDIS BH Acute Inpatient Value Set ***with*** HEDIS BH Acute Inpatient POS Value Set ***with*** HEDIS Schizophrenia Value Set.
- HEDIS BH Acute Inpatient Value Set ***with*** HEDIS BH Acute Inpatient POS Value Set ***with*** HEDIS Bipolar Disorder Value Set.
- HEDIS BH Acute Inpatient Value Set ***with*** HEDIS BH Acute Inpatient POS Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.

- At least two visits in an outpatient, intensive outpatient, partial hospitalization, ED, or non-acute inpatient setting, on different dates of service, with any diagnosis of schizophrenia. Any two of the following code combinations meet criteria:
  - HEDIS BH Stand Alone Outpatient/PH/IOP Value Set ***with*** HEDIS Schizophrenia Value Set.
  - HEDIS BH Outpatient/PH/IOP Value Set ***with*** HEDIS BH Outpatient/PH/IOP POS Value Set ***with*** HEDIS Schizophrenia Value Set.
  - HEDIS ED Value Set ***with*** HEDIS Schizophrenia Value Set.
  - HEDIS BH ED Value Set ***with*** HEDIS ED POS Value Set ***with*** HEDIS Schizophrenia Value Set.
  - HEDIS BH Stand Alone Nonacute Inpatient Value Set ***with*** HEDIS Schizophrenia Value Set.
  - HEDIS BH Non-acute Inpatient Value Set ***with*** HEDIS BH Non-acute Inpatient POS Value Set ***with*** HEDIS Schizophrenia Value Set.

- At least two visits in an outpatient, intensive outpatient, partial hospitalization, ED, or non-acute inpatient setting, on different dates of service, with any diagnosis of bipolar disorder. Any two of the following code combinations meet criteria:
  - HEDIS BH Stand Alone Outpatient/PH/IOP Value Set ***with*** HEDIS Bipolar Disorder Value Set.
  - HEDIS BH Stand Alone Outpatient/PH/IOP Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.
  - HEDIS BH Outpatient/PH/IOP Value Set ***with*** HEDIS BH Outpatient/PH/IOP POS Value Set ***with*** HEDIS Bipolar Disorder Value Set.
  - HEDIS BH Outpatient/PH/IOP Value Set ***with*** HEDIS BH Outpatient/PH/IOP POS Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.
  - HEDIS ED Value Set ***with*** HEDIS Bipolar Disorder Value Set.
  - HEDIS ED Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.
  - HEDIS BH ED Value Set ***with*** ED POS Value Set ***with*** HEDIS Bipolar Disorder Value Set.
  - HEDIS BH ED Value Set ***with*** ED POS Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.
  - HEDIS BH Stand Alone Non-acute Inpatient Value Set ***with*** HEDIS Bipolar Disorder Value Set.

- HEDIS BH Stand Alone Non-acute Inpatient Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.
- HEDIS BH Non-acute Inpatient Value Set ***with*** HEDIS BH Non-acute Inpatient POS Value Set ***with*** HEDIS Bipolar Disorder Value Set.
- HEDIS BH Non-acute Inpatient Value Set ***with*** HEDIS BH Non-acute Inpatient POS Value Set ***with*** HEDIS Other Bipolar Disorder Value Set.

Step 2: Exclude members who met any of the following criteria:

Beneficiaries with diabetes. There are two ways to identify beneficiaries with diabetes: by claim/encounter data and by pharmacy data.

The organization must use both methods to identify members with diabetes, but a member need only be identified by one method to be excluded from the measure. Members may be identified as having diabetes during the measurement year or the year prior to the measurement year.

- *Claim/encounter data.* Beneficiaries who met at any of the following criteria during the measurement year or the year prior to the measurement year (count services that occur over both years).
  - At least two outpatient visits (HEDIS Outpatient Value Set), observation visits (HEDIS Observation Value Set), ED visits (HEDIS ED Value Set), or non-acute inpatient encounters (HEDIS Nonacute Inpatient Value Set) on different dates of service, with a diagnosis of diabetes (HEDIS Diabetes Value Set). Visit type need not be the same for the two visits.
  - At least one acute inpatient encounter (HEDIS Acute Inpatient Value Set) with a diagnosis of diabetes (HEDIS Diabetes Value Set).
- *Pharmacy data.* Members who were dispensed insulin or oral hypoglycemics/ antihyperglycemics during the measurement year or year prior to the measurement year on an ambulatory basis (HEDIS Diabetes Medications List).

Beneficiaries who had no antipsychotic medications dispensed during the measurement year. There are two ways to identify dispensing events: by claim/encounter data and by pharmacy data. The organization must use both methods to identify dispensing events, but an event need only be identified by one method to be counted.

- *Claim/encounter data*. An antipsychotic medication (HEDIS Long-Acting Injections Value Set).
- *Pharmacy data*. Dispensed an antipsychotic medication (HEDIS Antipsychotic Medications List; HEDIS Antipsychotic Combination Medications List) on an ambulatory basis.

Specifications

Denominator	The eligible population
Numerator	***Diabetes Screening:*** Beneficiaries in the eligible population who have at least one glucose test (HEDIS Glucose Tests Value Set) or an HbA1c test (HEDIS HbA1c Tests Value Set) performed during the measurement year, as identified by claim/encounter or automated laboratory data.

Exclusions

Beneficiaries with diabetes.

There are two ways to identify members with diabetes: by claim/encounter data and by pharmacy data. The organization must use both methods to identify members with diabetes, but a member need only be identified by one method to be excluded from the measure. Beneficiaries may be identified as having diabetes during the measurement year or the year prior to the measurement year.

- *Claim/encounter data.* Beneficiaries who met at any of the following criteria during the measurement year or the year prior to the measurement year (count services that occur over both years).
  - At least two outpatient visits (HEDIS Outpatient Value Set), observation visits (HEDIS Observation Value Set), ED visits (HEDIS ED Value Set) or non-acute inpatient encounters (HEDIS Nonacute Inpatient Value Set) on different dates of service, with a diagnosis of diabetes (HEDIS Diabetes Value Set). Visit type need not be the same for the two visits.
  - At least one acute inpatient encounter (HEDIS Acute Inpatient Value Set) with a diagnosis of diabetes (HEDIS Diabetes Value Set).
- *Pharmacy data.* Members who were dispensed insulin or oral hypoglycemics/antihyperglycemics during the measurement year or year prior to the measurement year on an ambulatory basis (HEDIS Diabetes Medications List).

Beneficiaries who had no antipsychotic medications dispensed during the measurement year.

There are two ways to identify dispensing events: by claim/encounter data and by pharmacy data. The organization must use both methods to identify dispensing events, but an event need only be identified by one method to be counted.

- *Claim/encounter data*. An antipsychotic medication (HEDIS Long-Acting Injections Value Set).
- *Pharmacy data*. Dispensed an antipsychotic medication (HEDIS Antipsychotic Medications List; Antipsychotic Combination Medications List) on an ambulatory basis.

Appendix 2: Glossary of Terms and Abbreviations

CDC. Centers for Disease Control and Prevention.

CMS. Centers for Medicare & Medicaid Services.

Cohort. A specific sub-group of a larger population defined by a specific characteristic. Characteristics defining group membership may be one or a combination factors thought to potentially influence the outcome of interest. Examples of characteristics that define a cohort include age, race, health insurance coverage, state of residence, etc..

Coverage. A term used by healthcare insurers and health plan sponsors to refer to enrollment and continued eligibility for a specific, defined set of healthcare benefits. Coverage can be segmented into *medical benefit coverage*, *prescription drug benefit coverage*, and possible other subsets of healthcare benefits. In the case of employer-sponsored health insurance benefits, eligibility and enrollment is based on employment status with an employer-sponsored and election into a specific benefit. In the case of Medicaid, eligibility and enrollment is based on residency in the state that is sponsoring the health benefit, combined with other criteria such as income, gender, disability status, possibly work status, and other state-specific criteria. In the case of Medicare, eligibility and enrollment is based on age and disability status or end-stage renal disease status; for some benefits, eligibility and enrollment also requires election into and purchase of a specific benefit.

Employer-Sponsored Coverage. Health insurance or a healthcare benefit offered to a person as a benefit relating to their employment status or the employment status of a spouse, parent, or civil partner.

HEDIS.® Healthcare Effectiveness Data and Information Set. A set of standard metrics quantified using data and designed to measure quality across 6 domains of care: Effectiveness of Care, Access/Availability of Care, Experience of Care, Utilization and Risk-Adjusted Utilization, Health Plan Descriptive Information, Measures Collected Using Electronic Clinical Data Systems.

Medicaid. A joint federal- and state-sponsored health insurance program that provides healthcare coverage to eligible low-income adults, children, pregnant women, elderly adults, and people with disabilities. Medicaid is often used to refer to a collection of distinct programs that includes Medicaid Fee-for-Service, Medicaid Managed Care, Medical Assistance, and Children's Health Insurance Plan (CHIP). It also includes patients, referred to as “dual eligibles,” who concurrently qualify for benefits covered under both the Medicare and Medicaid plans.

National Quality Forum. A non-profit membership organization that reviews, validates, and provides expert consensus endorsement of specific healthcare quality metrics. See http://www.qualityforum.org/Home.aspx.

Prevalence. A measure of how common a disease or condition is in the population at a given time.