VERMONT Blueprint for Health

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Supporting Documentation

Methods & Measures Used in the Reporting for Blueprint's Hospital Service Area Profiles

This document was prepared by
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Summary of Methods

The Vermont Blueprint for Health's Hospital Service Area (HSA) Profiles were commissioned by the Department of Vermont Health Access (DVHA), Blueprint's parent agency, to provide policymakers, community health teams, providers, and other stakeholders with information on expenditure, utilization, effective and preventive care, Accountable Care Organization (ACO), and behavioral risk measures at the HSA level.

A Note of Caution About Comparing Profile Results Across Reporting Periods

Users of the new rolling year 2017 (RY2017) community profiles are cautioned against comparing rates in the current reporting period to previous reporting periods as the population demographics have shifted significantly due to changes in the source data, including:

- Reduction in the commercial, self-funded population: Due to the March 2016 U.S. Supreme Court ruling in *Gobeille v. Liberty Mutual Insurance Company,* in which the Court concluded that self-funded plans subject to the Employee Retirement Income Security Act of 1974 (ERISA) cannot be compelled to submit data to the state's all-payer claims database (APCD), a large number of self-funded health plans are no longer submitting data to VHCURES.
- New source of Medicare data: With the end of the U.S. Centers for Medicare & Medicaid Services (CMS) Multi-Payer Advanced Primary Care Practice (MAPCP) program, in which the Blueprint program was a participant, the data source for the Medicare Fee-for-Service (FFS) membership and claims data files and the CMS method to pull that data have changed. Thus, the RY2017 reporting is based on a complete refresh of all Medicare data for all years used in the profiles. Increased volumes of claims and paid dollars were noted, particularly for inpatient claims.

As a result of this shift in population demographics, when comparing the RY2017 adult profiles to the CY2016 adult profiles, there were increases in the Medicare (+22%) and Medicaid (+5%) populations and a reduction in the commercial (-15%) population. Given these changes in the reportable population and a resulting older and sicker population, certain measures are impacted.

Inpatient cost and utilization measures are significantly higher than in previous community profiles. The proportion of Medicaid members in the pediatric profile population also increased significantly. This has less impact on the relative comparisons between different practices or HSAs within the current RY2017 reporting, which risk-adjusts rates for payer mix, health status, and other factors. Use of the RY2017 profiles in conjunction with prior community reports to create trends should be avoided. For future reporting, Blueprint will be developing trend rates that utilize the new data source population so that trend rates can be validly compared.

The Vermont All-Payer Accountable Care Organization (ACO) Model ("the Model") is a healthcare reform initiative that enables the three main payer types of healthcare in Vermont (e.g., commercial insurers, Medicaid, and Medicare) to pay for healthcare differently than through fee-for-service reimbursement. It is based on an agreement between the State and the U.S. Centers for Medicare and Medicaid Services (CMS) and is intended to transition Vermont's current provider reimbursement system to a more flexible and predictable value-based system that rewards positive health outcomes. The Model builds on the work of the Blueprint and Vermont's ACO programs. The agreement with CMS contains a quality framework organized around three overarching population health goals: (1) improving access to primary care, (2) reducing deaths from suicide and drug overdose, and (3) reducing the prevalence and morbidity of chronic disease. Many of the measures in the quality framework are incorporated into the HSA profiles and are designated with an asterisk (*).

The HSA Profiles combine data from all major payer types (i.e., commercial, Medicaid, and Medicare) and include selected measures prepared by Onpoint as well as ACO payment and reporting measures, clinical information from the Blueprint Clinical Registry, and behavioral measures based on the Behavioral Risk Factor Surveillance System (BRFSS).

Each member's data was assigned to one of Vermont's 13 HSAs based on the location of the Blueprint primary care practice to which the member was attributed. These profiles, therefore, represent information about Vermont residents that received their primary care at Blueprint participating practices. Each HSA was compared to the statewide average for all Blueprint practices.

Two types of HSA profiles were generated: adult (ages 18 years and older) and pediatric (ages 1–17 years). The adult profiles include members with commercial payers as primary, members with Medicaid as primary, Medicare Advantage enrollees, and members with Medicare as primary. The pediatric profiles include members with commercial payers as primary and members with Medicaid as primary.

Rates of expenditure and utilization were adjusted for differences in population risk between HSAs. These adjustments were based on demographic and health status indicators. Additional enhancements were made in the risk adjustment for the Medicaid and Medicare populations within each practice. Expenditure and utilization measures were capped for outliers in the data using the 99th percentile for each measure. This capping was done at the statewide level, not at the individual HSA level.

Expenditures were measured based on the allowed amount on claims, which includes both the plan payments and the member's out-of-pocket payments (i.e., deductible, coinsurance, and copayments). Because pricing may vary in Vermont, a standardized Resource Use index (RUI) was included to measure aggregate resource consumption across all components of care (i.e., inpatient, outpatient facility, professional, and pharmacy). The RUI has been risk-adjusted for each practice to the statewide rate of total utilization. An RUI of 1.00 would indicate total utilization the same as the statewide average, while an RUI of 1.06 would indicate total

utilization that was 6% higher than statewide average, and an RUI of 0.94 would indicate total utilization that was 6% lower than the statewide average.

Effective and preventive care measures were developed by Onpoint based on HEDIS specifications from the National Committee for Quality Assurance (NCQA).[1] These measures were selected carefully in consultation with Blueprint leadership to ensure that HSAs would have a sufficient sample size for statistical reliability.

ACO measures were reported both as stratified by payer type (e.g., commercial, Medicaid, Medicare) and as combined across payer types. A few of the ACO measures that were based on the linked clinical data had insufficient population sizes to allow reporting for all HSAs but were retained in the profiles nonetheless to identify and guide efforts to improve the collection of clinical data in Vermont's Blueprint Clinical Registry. Similarly, a statewide evaluation of outcomes for diabetic members who had a hemoglobin A1c (HbA1c) test during the measurement year — a measure enabled by the linkage of claims and clinical data — was included in the profiles to demonstrate the usefulness of the linked clinical data source.

Data Sources

The Blueprint HSA Profiles consist of population-based reporting and use eligibility and claims data supplied to the state's all-payer claims database, the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES). These reports include data for Vermont residents enrolled in commercial health plans, Medicaid enrollees for whom Medicaid was the primary payer (i.e., excluding those with dual eligibility for Medicare), and Medicare enrollees for whom Medicare was the primary payer. Data included all commercial health plans in Vermont supplying data to VHCURES and was not restricted to the three health plans — Blue Cross & Blue Shield of Vermont, Cigna HealthCare, and MVP Health Care — currently participating in Blueprint.

For Blueprint practices using the Blueprint Clinical Registry, VHCURES data also was linked to clinical data. This linkage was accomplished using fields available in both data sets (e.g., ZIP code of residence, first name, last name, date of birth, and gender). Approximately 89.8% of Blueprint Clinical Registry IDs were successfully matched to a VHCURES member. (Note that out-of-state residents and uninsured residents cannot be linked between the two data sets.) The linked data was used to calculate those measures that required both claims data and clinical outcomes data, such as HbA1c control for patients with diabetes or blood pressure control for patients with hypertension.

[1] HEDIS® is a registered trademark of the National Committee for Quality Assurance.

Data from the 2015 and 2016 Vermont Behavioral Risk Factor Surveillance System (BRFSS), a telephone survey conducted annually by the Vermont Department of Health, also was compiled at the HSA level to provide some context around key behavioral risk factors in the state.

Attribution of Members to Hospital Service Areas (HSAs)

Attribution of members was performed at the practice level. The VHCURES data contains information on individual practitioners but does not contain practice-level identifiers. Rosters of primary care physicians, physician assistants, and nurse practitioners for each active Blueprint practice were used to crosswalk to the VHCURES practitioner-specific identifiers.

A standard attribution method was used to assign each member in the VHCURES data to a primary care practice. This was based on a 24-month look-back using Evaluation and Management (E&M) visit codes defined by the U.S. Centers for Medicare & Medicaid Services (CMS) (see Table 1 and Table 2 for further detail). The member was assigned to a primary care practice based on the following logic:

- The most number of visits
  - If the same visit count, the most recent visit date
    - If the same visit date, the largest dollar value
      - If the same visit date and dollar value, then the higher Blueprint practice number

Table 1. E&M CPT/HCPCS Procedure Codes Used to Identify Primary Care Visits from VHCURES by Visit Type*

Visit Type	Codes Used to Identify
CPT/HCPCS Procedure Code Description Summary	
Evaluation and Management – Office or Other Outpatient Services	• New Patient: 99201–99205 • Established Patient: 99211–99215 • Clinic Visit Used by FQHC & RHC: T1015
Consultations – Office or Other Outpatient Consultations	New or Established Patient: 99241–99245
Nursing Facility Services	• E & M New/Established patient: 99304–99306 • Subsequent Nursing Facility Care: 99307-99310 • Nursing Facility Discharge: 99315–99316 • Annual Nursing Facility Assessment: 99318
Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Service	• Domiciliary or Rest Home Visit New Patient: 99324–99328 • Domiciliary or Rest Home Visit Established Patient: 99334–99337 • Domiciliary or Rest Home Care Supervision: 99339-99340
Home Services	• New Patient: 99341–99345 • Established Patient: 99347–99350

Visit Type	Codes Used to Identify
CPT/HCPCS Procedure Code Description Summary	
Prolonged Services – Prolonged Physician Service with Direct (Face-to-Face) Patient Contact	99354 and 99355
Prolonged Services – Prolonged Physician Service Without Direct (Face-to-Face) Patient Contact	99358 and 99359
Preventive Medicine Services	• New Patient: 99381–99387 • Established Patient: 99391–99397
Medicare Covered Wellness Visits	• G0402 – Initial Preventive Physical Exam ("Welcome To Medicare" Visit) • G0438 – Annual Wellness Visit, First Visit • G0439 – Annual Wellness Visit, Subsequent Visit
Counseling Risk Factor Reduction and Behavior Change Intervention	• New or Established Patient Preventive Medicine, Individual Counseling: 99401–99404 • New or Established Patient Behavior Change Interventions, Individual: 99406–99409 • New or Established Patient Preventive Medicine, Group Counseling: 99411–99412
Other Preventive Medicine Services – Administration and Interpretation	99420
Other Preventive Medicine Services – Unlisted Preventive	99429
Newborn Care Services	• Initial and Subsequent Care for Evaluation and Management of Normal Newborn Infant: 99460–99463 • Attendance at Delivery (When Requested by the Delivering Physician) and Initial Stabilization of Newborn: 99464 • Delivery/Birthing Room Resuscitation: 99465

* (1) Professional claims in VHCURES were determined as those having a valid Service Site (Professional) (MC037) reported in the medical claims (i.e., not equal to "-1" [payer supplied no value] or "-2" [payer supplied an incorrect or invalid value]); (2) HCPCS code T1015 (i.e., clinic visit/encounter) was not included in the original attribution specifications for Blueprint but was determined to be widely used by some FQHCs and RHCs in the absence of other codes to identify visits; (3) primary care practitioner visits billed on facility claims were identified as those with a reported Type of Bill (Institutional) code of 71, 73, 77, or 85; (4) for commercial, Medicaid, and Medicare data, the VHCURES field of rendering provider was used to identify the practitioner.

Table 2. E&M CPT/HCPCS Procedure Codes Used to Identify Primary Care Visits from VHCURES by Facility Claim Type*

Facility Claim Types	Codes Used to Identify
Bill Type, Revenue Code, and Place of Service Description Summary	
Federally Qualified Health Center (FQHC) and Rural Health Centers (RHCs)	Bill Types: 71, 73, 77 Revenue Codes: • 0521 = Clinic Visit by Member to RHC/FQHC • 0522 = Home Visit by RHC/FQHC Practitioner • 0524 = Free-Standing Family Clinic • 0525 = Nursing Home Visit by RHC/FQHC Practitioner
Critical Access Hospitals (CAHs) Professional Services	Bill Type: 85 Revenue Codes: • 0960–0989 = Professional Services

* (1) For facility claims with a reported Type of Bill (Institutional) code of 85, revenue codes for professional services (i.e., 0960–0989) were included; (2) for Medicare facility claims, the VHCURES field of Attending Provider NPI was used; when the attending provider

information was not provided, the rendering provider was used instead; (3) for Medicaid facility claims, when VHCURES attending provider information was not provided, rendering provider was used.

For the Blueprint Practice Profiles, HSA comparison data from the practices was aggregated at the Hospital Service Area level. Members were attributed to an HSA based on the ZIP code of the practice to which they were attributed, according to address data provided to Onpoint by Blueprint. Table 3 identifies the practices included in each HSA.

Table 3. Practices Included in Each HSA's Data

Blueprint Practice HSA	Practice ID	Practice Name
Barre	VT02	Family Medicine - Berlin
	VT142	Barre Pediatrics (Associates in Pediatrics - Barre)
	VT154	Associates in Pediatrics (Associates in Pediatrics - Berlin)
	VT257	Granite City Primary Care
	VT262	Gifford Health Center at Berlin
	VT31	Barre Internal Medicine
	VT32	Central Vermont Primary Care
	VT33	Green Mountain Family Practice
	VT34	Mad River Family Practice
	VT35	Montpelier Integrative Family Health
	VT36	Waterbury Medical Associates
	VT37	Mountain View Medical
	VT38	The Health Center
Bennington	VT108	Green Mountain Pediatrics
	VT145	Shaftsbury Medical Associates
	VT151	SVMC Pediatrics
	VT221	SVMC Medical Associates
	VT235	Battenkill Valley Health Center
	VT258	SVMC Pownal Campus
	VT53	Keith Michl; MD
	VT54	Mount Anthony Primary Care
	VT55	Eric Seyferth; MD
	VT56	SVMC Deerfield Valley Campus
	VT57	SVMC Northshire Campus
	VT58	Avery Wood; MD
	VT84	Brookside Pediatrics and Adolescent Medicine
Brattleboro	VT01	Windham Family Practice
	VT105	Grace Cottage Family Health
	VT116	Just So Pediatrics
	VT180	Brattleboro Internal Medicine
	VT183	Putney Family Healthcare
	VT184	Brattleboro Family Medicine
	VT207	Maplewood Family Practice
	VT214	HeartSong Health: Ani Hawkinson

Blueprint Practice HSA	Practice ID	Practice Name
	VT71	Brattleboro Primary Care
Burlington	VT03	Family Medicine - Colchester
	VT04	Adult Primary Care - Essex
	VT05	Adult Primary Care - Burlington
	VT06	Family Medicine - South Burlington
	VT104	Alder Brook Family Health
	VT110	Family Medicine - Hinesburg
	VT117	Appletree Bay Primary Care
	VT139	Richmond Family Medicine
	VT156	Thomas Chittenden Health Care (TCHC)
	VT160	Pediatric Primary Care - Burlington
	VT161	Pediatric Primary Care - Williston
	VT21	Riverside Health Center
	VT212	Champlain Center for Natural Medicine
	VT216	Mountain View Natural Medicine
	VT22	Timber Lane Pediatrics
	VT23	Timber Lane North Peds
	VT248	Frank Landry MD PLC
	VT255	Vermont Naturopathic Clinic
	VT26	Adult Primary Care - South Burlington
	VT265	South End Health Center
	VT27	Adult Primary Care - Williston
	VT271	UVM Medical Center Infectious Disease Clinic
	VT272	Good Health
	VT28	Family Medicine - Milton
	VT390	Timber Lane Milton Peds
	VT391	Winooski Family Health
	VT393	Champlain Islands Health Center
	VT399	Charlotte Health Center
	VT45	Hagan; Rinehart and Connolly Pediatricians; PLLC
	VT51	Gene Moore
	VT68	Dr. Hebert
	VT95	Essex Pediatrics
	VT97	Evergreen Family Health
Middlebury	VT07	Middlebury Family Health Center
	VT12	Porter Internal Medicine
	VT123	Mountain Health Center
	VT127	UVM Health Network Porter Medical Center Primary Care Brandon
	VT136	Rainbow Pediatrics
	VT20	UVM Health Network Porter Medical Center Pediatric Primary Care
	VT402	UVM Health Network Porter Medical Center Primary Care Bristol
	VT404	UVM Health Network Porter Medical Center Primary Care Vergennes

Blueprint Practice HSA	Practice ID	Practice Name
	VT67	UVM Health Network Porter Medical Center Primary Care Middlebury
Morrisville	VT08	Morrisville Family Practice
	VT09	Stowe Family Practice
	VT101	Family Practice Associates
	VT112	Paul Rogers
	VT252	Appleseed Pediatrics
	VT66	Hardwick Area Health Center
Newport	VT11	North Country Primary Care Newport
	VT251	North Country Pediatrics
	VT65	Island Pond Health Center
	VT77	North Country Primary Care Barton Orleans
Randolph	VT260	Bethel Health Center
	VT261	Chelsea Health Center
	VT263	Rochester Health Center
	VT264	Gifford Primary Care
Rutland	VT118	Marble Valley HealthWorks
	VT133	Pediatric Associates
	VT239	Associates in Primary Care
	VT276	Shorewell Community Health Center
	VT48	Castleton Family Medical Center
	VT49	Brandon Medical Center
	VT50	Mettowee Valley Family Medical Center
	VT78	Rutland Community Health Center
	VT92	Drs. Peter and Lisa Hogenkamp
Springfield	VT18	Ludlow Health Center
	VT19	Charlestown Family
	VT201	Mountain Valley Medical Clinic
	VT24	Chester Family Practice
	VT25	Rockingham Medical Group
	VT63	Springfield Community Health Center
St Albans	VT130	NMC - Northwestern Primary Care
	VT131	Northwestern Georgia Health Ctr
	VT149	St. Albans Health Center
	VT268	Northwestern Pediatrics- Enosburg Falls
	VT269	Northwestern Pediatrics- Saint Albans
	VT270	Fairfield Street Health Center
	VT29	Cold Hollow Family Practice
	VT396	Fairfax Associates in Medicine
	VT72	Richford Health Center
	VT79	St Albans Primary Care
	VT83	Swanton Health Center
	VT94	Enosburg Health Center

Blueprint Practice HSA	Practice ID	Practice Name
St Johnsbury	VT209	Kingdom Internal Medicine
	VT39	Concord Health Center
	VT40	Danville Health Center
	VT41	St. Johnsbury Family Health Center
	VT43	Corner Medical
	VT44	St. Johnsbury Pediatrics
White River Junction	VT163	Wells River
	VT164	White River Family Practice
	VT166	Bradford
	VT178	South Royalton Health Center
	VT259	Upper Valley Pediatrics; PLLC
	VT59	Mt. Ascutney Hospital Physician Practice
	VT60	Ottauquechee Health Center
	VT93	E. Corinth

Demographics, Health Status, & Adjustment of Rates for Risk

Demographic and health status information derived from the VHCURES claims data served as the primary inputs for the risk-adjustment methods used for the Blueprint HSA Profiles. Utilized components included age, gender, presence of a Blueprint-selected chronic condition, health status as measured by 3M™ Clinical Risk Groups (CRGs), and (for adult profiles) the occurrence of a maternity diagnosis. (Further detail on Blueprint's selected chronic conditions and 3M CRGs is provided in the narrative below.)

Adjustments also were made for the partial length of enrollment reported for some members during the measurement year. Average members (i.e., cumulative member months divided by 12) were reported for each HSA.

For the purposes of risk adjustment, members also were stratified by age group:

- Pediatric Profiles: 1–4 years, 5–11 years, and 12–17 years
- Adult Profiles: 18–34 years, 35–44 years, 45–54 years, 55–64 years, 65–74 years, 75–84 years, and 85 years and older

Due to the potential for interaction effects of age and gender, the adjustment models used for the Blueprint HSA Profiles combined age and gender into groupings (e.g., males aged 18–34 years, females aged 18–34 years, etc.).

Blueprint-Selected Chronic Diseases

Blueprint-selected chronic diseases were identified from the VHCURES claims data using diagnosis coding reported in the medical claims and were based on nationally accepted definitions (e.g., NCQA HEDIS). The algorithm employed to determine Blueprint-selected chronic diseases was based on the following criteria: one or more inpatient visits, one or more outpatient emergency department (ED) visits, or two or more non-hospital outpatient visits. For identifying members with diabetes and asthma, at least two pharmacy prescriptions also were required as part of the algorithm (see Table 4). For the pediatric population, the chronic variable included attention deficit disorder (ADD).

Table 4. Selected Chronic Disease Definitions

Chronic Disease	Medical Claim ICD-9 & ICD-10 Diagnosis Code (Include 4th & 5th Digits)*	Pharmacy	Source from Which ICD-9 & ICD-10 Codes were Determined
Asthma	ICD-9: 493 ICD-10: J45	NCQA NDC List	HEDIS ASM Measure
Attention Deficit Disorder (ADD) (Pediatric Only)	ICD-9: 31400, 31401 ICD-10: F90		American Academy of Pediatrics and National Initiative for Children's Healthcare Quality
Chronic Obstructive Pulmonary Disorder (COPD)	ICD-9: 491, 492, 496 ICD-10: J41, J42, J43, J44		HEDIS SPR Measure
Congestive Heart Failure (CHF)	ICD-9: 428 ICD-10: I50		Council of State and Territorial Epidemiologists (CSTE) Indicator #37
Coronary Heart Disease	ICD-9: 410–414 ICD-10: I20, I21, I22, I24, I25		Council of State and Territorial Epidemiologists (CSTE) Indicator #36
Depression	ICD-9: 296.2, 296.3, 300.4, 309.1, 311 ICD-10: F32, F33		HEDIS AMM Measure
Diabetes	ICD-9: 250, 357.2, 362.0, 366.41, 648.0 ICD-10: E10, E11, E13, O24	NCQA NDC List	HEDIS CDC Measure
Hypertension (Essential)	ICD-9: 401 ICD-10: I10		HEDIS CBP Measure

* Includes principal diagnosis and any secondary diagnosis code reported on the claim.

Clinical Risk Groups

Clinical Risk Groups (CRGs) were applied to the VHCURES claims data to determine each member's health status. CRGs are a product of 3M™ Health Information Systems and are used throughout the United States as a method of risk-adjusting populations. The grouper first classifies each member into one of 1,080 distinct clinical groups based on the diagnoses reported on claims and then further aggregates these clinical groupings into nine major clinical CRG statuses. Due to small numbers in some categories used for the Blueprint HSA Profiles' risk-adjustment regression model, these nine categories were combined further into *Healthy*, *Acute or Minor Chronic*, *Moderate Chronic*, *Significant Chronic*, and *Cancer or Catastrophic*.

Table 5 identifies both the nine principal CRG categories (columns 1 and 2) as well as the aggregated categories used in the Blueprint profiles' regression model (Column 4).

Table 5. CRG Major Health Status Categories

#	CRG Major Health Status Categories	Examples	Aggregation for Regression Model
1	Healthy	N/A	Reference Group
2	History of Significant Acute Disease	Acute ear, nose, or throat illness	Acute or Minor Chronic
3	Single Minor Chronic Disease	Minor chronic joint	Acute or Minor Chronic
4	Minor chronic disease in multiple organ systems	Minor chronic joint and migraine	Moderate Chronic
5	Single dominant or moderate chronic disease	Diabetes	Moderate Chronic
6	Significant chronic disease in multiple organ systems	Diabetes and hypertension	Significant Chronic
7	Dominant chronic disease in 3 or more organ systems	CHF, diabetes, and COPD	Significant Chronic
8	Dominant, metastatic, and complicated malignancies	Malignant breast cancer	Cancer or Catastrophic
9	Catastrophic conditions	HIV, cystic fibrosis, muscular dystrophy, quadriplegia	Cancer or Catastrophic

It should be noted that CRGs do not include pregnancy and child birth in clinical classification. Since pregnant women, women delivering, and newborns contribute to utilization and expenditures, members who had claims for any of these diagnoses were flagged for the risk-adjustment model. The following ICD-9 and ICD-10 diagnosis coding were used for this purpose:

- Pregnancy and child birth: ICD-9 630–677 and ICD-10 O00-O9A (and all 3rd and 4th digits)
- Conditions in perinatal period: ICD-9 760–779 and ICD-10 P00-P96 (and all 3rd and 4th digits)
- Supervision of pregnancy: ICD-9 V22, V23, V24, V27 and ICD-10 Z33, Z34, Z39 (and all 3rd and 4th digits)
- Live-born infants: ICD-9 V3 and ICD-10 Z38 (and all 3rd and 4th digits)

Adjustment for the Medicaid & Medicare Populations

These profiles combine three payer populations — commercial, Medicaid, and Medicare — that have significant differences in demographics, socioeconomic statuses, health statuses, provider reimbursement structures, and services covered and used. For these profiles, risk-adjustment models were further enhanced to include three adjustments for Medicaid. As in the previous version of HSA profiles, Medicaid was adjusted at the individual member level.

Further examination indicated that members who received Special Medicaid Services (SMSs) may have had a level of disability not adjusted for through the CRGs. Examples of Special Medicaid Services include members receiving day treatment, residential treatment, case management services, and special school services covered by the Department of Education. These types of services can contribute significantly to a member's total expenditures. After evaluation of statistical distributions for these services, members with more than the median (50^{th} percentile) of expenditures for these services were flagged and adjusted for in the risk-adjustment model.

Evaluation of the risk-adjustment model also indicated that a practice's percentage of total members that were covered by Medicaid (i.e., "percent Medicaid") was a statistically significant predictor of total expenditures. Practices in Vermont varied significantly regarding the percentage of members who were Medicaid. The range for practices for this round of profiles production was 1.8% – 55.2% for the adult profiles, while the range for practices in the pediatric profiles was 38.3% – 93.1%. The risk-adjustment model included a new variable for each member that was their practice's percent Medicaid. This variable adjusts for Medicaid practice-level effects at the person level, which were then rolled up to the HSA level. Additionally, to account for differences in maternity between the major insurers, an interaction term was added between Medicaid and maternity.

Additional tuning of the risk-adjustment model was made for the HSAs' Medicare populations. First, Medicare was adjusted based on an individual's eligibility status. Second, to account for differences in practice case mix, the Medicare proportion of a practice's total attributed members was included as an adjustor. The range for practices in the adult profiles was 1.4% – 72.2% for this round of profiles production. (Medicare was not included in pediatric profiling.) As with the Medicaid adjustment described above, this variable first adjusted for Medicare practice-level effects at the person level and then rolled up to the HSA level. Finally, using Medicare-specific eligibility elements, binary flags were developed to identify disability and end-stage renal disease (ESRD).

Risk Adjustment

Risk adjustment for reporting was implemented in SAS Enterprise Guide (Version 5.1) using regression methods. For utilization measures, a Poisson distribution was assumed. Models included age/gender stratification groups, Blueprint-selected chronic conditions, CRG classification, maternity, and the additional Medicaid and Medicare adjustments described

above. Adjusted rates were produced by summing the differences between each member's actual value and their predicted measurement from the model. Rates were weighted for partial lengths of enrollment.

To calculate the adjusted rate, adjusted values were computed for each member by adding model residuals (e) to the population grand mean ($\bar{y}$). To report the overall adjusted rate for each practice, the mean of the adjusted values for the members in each HSA ($\bar{y}_{\text{hsa}}$) and statewide ($\bar{y}_{\text{statewide}}$) were computed. The following equations represent the models for the adult and pediatric HSA Profiles.[2]

Adult Model

$$y = \alpha + (F\_AGE1834)\beta_1 + (F\_AGE3544)\beta_2 + (F\_AGE4554)\beta_3 + (F\_AGE5564)\beta_4 + (F\_AGE6574)\beta_5 + (F\_AGE7584)\beta_6 + (F\_AGE85PLUS)\beta_7 + (M\_AGE3544)\beta_8 + (M\_AGE4554)\beta_9 + (M\_AGE5564)\beta_{10} + (M\_AGE6574)\beta_{11} + (M\_AGE7584)\beta_{12} + (M\_AGE85PLUS)\beta_{13} + (MEDICAID)\beta_{14} + (MEDICARE)\beta_{15} + (DUAL\ ELIGIBILITY)\beta_{16} + (SMS)\beta_{17} + (PRACTICE\_PERCENT\_MEDI)\beta_{18} + (PRACTICE\_PERCENT\_MCARE)\beta_{19} + (DISABLED)\beta_{20} + (ESRD)\beta_{21} + (CHRONIC)\beta_{22} + (CRG\_ACUTE\_MINOR)\beta_{23} + (CRG\_CHRONIC)\beta_{24} + (CRG\_SIGNIFICANT\_CHRONIC)\beta_{25} + (CRG\_CANCER\_CATASTROPHIC)\beta_{26} + (MATERNITY)\beta_{27} + (MATERNITY * MEDICAID)\beta_{28} + \varepsilon$$

Pediatric Model

$$y = \alpha + (F\_AGE0104)\beta_1 + (M\_AGE0511)\beta_2 + (F\_AGE0511)\beta_3 + (F\_AGE1217)\beta_4 + (M\_AGE1217)\beta_5 + (MEDICAID)\beta_6 + (SMS)\beta_7 + (PRACTICE\_PERCENT\_MEDI)\beta_8 + (CHRONIC\_PED)\beta_9 + (CRG\_ACUTE\_MINOR)\beta_{10} + (CRG\_CHRONIC)\beta_{11} + (CRG\_SIGNIFICANT\_CHRONIC)\beta_{12} + (CRG\_CANCER\_CATASTROPHIC)\beta_{13} + \varepsilon$$

$$\bar{y} = \left(\frac{\sum y_i}{MMA}\right)$$

$$y_{\text{adj}} = \bar{y} + e$$

$$e = y - \hat{y}$$

[2] For the adult model, males, ages 18–34 years, and "healthy" individuals (from the 3M CRG categories) served as the reference group and therefore do not appear in the model statement. For the pediatric model, males, ages 1–4 years, and "healthy" individuals (from the 3M CRG categories) served as the reference group and therefore do not appear in the model statement.

$$\bar{y}_{\text{hsa}} = \left(\frac{\sum y_{adj_i}}{\sum MMA_i}\right) \text{ for the practices in each HSA}$$

$$\bar{y}_{\text{statewide}} = \left(\frac{\sum y_{adj_i}}{\sum MMA_i}\right) \text{ for all members (equals the grand mean)}$$

Where:

- α is the intercept
- ε is the error term
- $\hat{y}$ is the predicted value from the regression model for each member
- e is the residual
- MMA is the average enrollment for each participant (i.e., the cumulative member months of enrollment during the year divided by 12)
- Subscript $_i$ indicates a value for an individual member

Measurement of Expenditures

Expenditures were measured based on the allowed amount on claims, which included both the plan payments and the member's out-of-pocket payments (i.e., deductible, coinsurance, and copayments). For each member, total expenditures were determined for the measurement year. In addition, expenditures by major and selected service categories were determined. Each detailed expenditure category was capped separately at the 99th percentile of the statewide study population to reduce the distorting influence of extreme outlier cases.

Expenditure rates were computed as an annualized adjusted rate using the risk-adjustment methods described previously. Lower and upper confidence intervals of 95 percent have been included.

The major and detailed expenditure categories (see Table 6) were based on the type of claim, primary diagnosis codes, revenue codes, site of service codes, provider taxonomy codes, and pharmacy therapeutic groupings based on assignment of National Drug Codes (NDCs) using Red Book®. The reporting was hierarchical and rolled up service-line claim payments to the header claim level. For example, if an outpatient hospital claim contained a primary diagnosis of mental health or substance abuse (i.e., ICD-9 codes 290–316 or ICD-10 codes F01–F99), then the entire claim, regardless of the specific services performed, was assigned to the category of outpatient hospital mental health / substance abuse.

Table 6. Expenditure Reporting Category Definitions

Description	Major Category	Detail Category
Hospital Inpatient	Claim type description = 'Facility', type of setting = 'Inpatient', and place of setting = 'Acute inpatient or hospital' (whole claim is assigned hierarchically in order below based on finding the diagnosis or revenue code)	
Mental/Substance Inpatient		1. Primary diagnosis code ICD-9: 290–316; ICD-10: F01–F99
Maternity-Related and Newborns		2. Primary diagnosis code ICD-9: 630–677, 760–779, V30–V39, V22–V24, V27; ICD-10: O00-O9A, P00-P96, Z38, Z33, Z34, Z39
Surgical		3. Revenue codes 0360–0369 (operating room service) within the claim
Medical		4. All others
Hospital Outpatient	Claim type description = 'Facility', type of setting = 'Outpatient', and place of setting = 'Hospital' (whole claim is assigned hierarchically in order below based on finding the diagnosis or revenue code)	
Hospital Mental Health / Substance Abuse		1. Primary diagnosis codes 290–316
Observation Room		2. Revenue code 0762
Emergency Room		3. Revenue codes 0450–0459
Outpatient Surgery		4. Revenue codes 0360–0369 (i.e., operating room services)
Outpatient Radiology		5. Revenue codes 0320–0359, 0610–0619
Outpatient Lab		6. Revenue codes 0300–0319
Hospital-Dispensed Pharmacy		7. Revenue codes 0250–0259
Outpatient Physical Therapy		8. Revenue codes 0420–0429
Outpatient Other Therapy		9. Revenue codes 0430–0439, 0440–0449
Other Outpatient Hospital		10. All Others
Professional Total	Claim type description = 'Professional' and type of setting = 'Provider' or claim type = 'Outpatient' and type of setting = 'FQHC' or 'Rural Health Clinic'	
Physician Services	Primary diagnosis code not ICD-9 290–316 or ICD-10 F01–F99	Provider taxonomy coding indicates provider specialty is an allopathic or osteopathic physician (excluding psychiatrist)
Physician Inpatient Setting		With Place of Service code 21
Physician Outpatient Setting		With Place of Service code: 19, 22
Physician Office Setting		With Place of Service code 11
Professional Non-Physician		Provider taxonomy coding indicates nurse practitioner, physician assistant, physical therapist, chiropractor, podiatrist, speech therapist, occupational therapist, optometrist/optician, respiratory therapist

Description	Major Category	Detail Category
Professional Mental Health Provider	Primary diagnosis code ICD-9 290–316 or ICD-10 F01–F99	Provider taxonomy coding indicates psychiatrist, psychologist, MSW, LICSW, LCSW, or claims from other providers with a principal diagnosis of mental health or substance abuse
Pharmacy	From pharmacy claims and medical claims paid to pharmacies	
Pharmacy Mental		Red Book classification used to determine therapeutic CNS medications based on NDC codes
Special Medicaid Services	From Category of Service and Fund Source Coding as identified in consultation with Vermont Medicaid staff.	Examples include day treatment, residential care, school-based services, dental services, transportation, and case-management.

Resource Use Index

Expenditures were measured based on the allowed amount on claims, which included both the plan payments and the member's out-of-pocket payments (i.e., deductible, coinsurance, and copayments). Because pricing and reimbursement can vary, the expenditure measures do not provide a measure of cost based on actual consumption of resources — that is, the frequency and intensity of all services used.

In order to address this issue, the Blueprint HSA profiles include an additional measure of overall cost: the total Resource Use Index (RUI). This measure is based on software developed by HealthPartners as part of their Total Cost of Care (TCOC) measurement system, which has been endorsed by the National Quality Forum (NQF).[3]

For Blueprint HSA Profiles, the TCOC software was applied to the VHCURES claims data. The software standardizes resource use for different components of care using weighting methods (i.e., Medicare Severity Diagnosis Related Groups [MS-DRGs] for inpatient, Current Procedural Terminology codes [CPTs] and associated Ambulatory Payment Classifications [APCs] for outpatient facility, and CPTs and associated Resource-Based Relative Value Scale [RBRVS] relative weights for professional) to measure the relative intensity of services. Each of these is a standard system used nationally for measuring relative intensity of resource use. For pharmacy claims, HealthPartners used a national pharmacy data source to develop the relative weights. The Total Care Relative Resource Values (TCRRVs) are supplied as part of the HealthPartners software. Once the TCRRVs are determined for each care setting, adjustment factors are applied to calibrate the TCRRVs to the paid amount distributions between settings (i.e., inpatient, outpatient facility, professional, and pharmacy).

3 See: https://www.healthpartners.com/hp/about/tcoc/

The Blueprint HSA Profiles report both the total Resource Use Index and the resource use for each component part of care. The RUI for each HSA was computed by dividing the HSA's adjusted TCRRV rate by the statewide TCRRV rate.

Measurement of Utilization

Selected utilization measures were determined from the claims data using the definitions outlined in Table 7. The diagnostic testing and non-hospital outpatient visit measures were based on CPT coding linked to the Berenson-Eggers Type of Service (BETOS) classification system developed by CMS. Utilization rates were computed as an annualized adjusted rate per 1,000 members using the risk-adjustment methods described above. Lower and upper confidence intervals of 95 percent also were included.

Table 7. Methods & Coding for the Utilization by Type of Service Section

Category/Measure	Methods/Coding
Inpatient Hospital	
Inpatient Discharges	NCQA HEDIS Inpatient Utilization (IPU) measure: Medical, Surgical, Maternity. Mental disorders are not excluded. Counts the number of inpatient discharges.
Inpatient Days	NCQA HEDIS Inpatient Utilization (IPU) measure: Medical, Surgical, Maternity. Mental disorders are not excluded. Last date of service minus first date of service. If inpatient days were greater than 90, inpatient days were capped at 90.
Outpatient Service Encounters	
Outpatient Emergency Department Visits	NCQA HEDIS Ambulatory Care (AMB) emergency department visit specifications but does not exclude mental disorders
Outpatient Potentially Avoidable Emergency Department Visits	NCQA HEDIS Ambulatory Care (AMB) emergency department visit specifications and ICD-9 / ICD-10 primary diagnosis codes: ICD-9 • 034.0 (sore throat, strep) • 079.99 (viral infection, unspecified) • 300.00, 300.02 (anxiety, unspecified or generalized) • 372.00, 372.30 (conjunctivitis, acute or unspecified) • 380.10, 381.01, 381.4, 382.00, 382.9 (external and middle ear infections, acute or unspecified) • 461.9, 473.9, 462, 465.9 (upper respiratory infections, acute or unspecified) • 466.0, 786.2, 490 (bronchitis, acute or unspecified, or cough) • 493 (asthma) • 691.0, 691.8, 692.6, 692.9, 782.1 (dermatitis and rash) • 719.4 (joint pain) • 724.2, 724.5 (lower/unspecified back pain) • 729.1, 729.5 (muscle/soft tissue limb pain) • 780.79 (fatigue) • 784.0 (headache) ICD-10 • J020, J0300, J0301 (sore throat, strep) • B9710 (viral infection, unspecified) • F419, F411 (anxiety, unspecified or generalized) • H1030, H1031, H1032, H1033, H109 (conjunctivitis, acute or unspecified) • H6590–H6593, H6690–H6693, H6000–H6003, H6010–H6013, H60311–H60319, H60321–H60329, H60391–H60399, H6500–H6507, H66001–H66009 (external and middle ear infections, acute or unspecified)

Category/Measure	Methods/Coding
	• J028, J029, J0190, J0191, J069, J329 (upper respiratory infections, acute or unspecified • J40, J200, J201, J202, J203, J204, J205, J206, J207, J208, J209, R05 (bronchitis, acute or unspecified, or cough) • J4520, J4530, J4540, J4550, J4522, J4532, J4542, J4552, J4521, J4531, J4541, J4551, J45990, J45991, J45909, J45998, J45902, J45901 (asthma) • L22, L200, L2081, L2082, L2084, L2089, L209, L237, L247, L255, L239, L249, L259, L300, L302, L308, L309, R21 (dermatitis and rash) • M25511, M25512, M25519, M25521, M25522, M25529, M25531, M25532, M25539, M25551, M25552, M25559, M25561, M25562, M25569, M25571, M25572, M25579, M2550 (joint pain) • M545, M5489, M549 (lower or unspecified back pain) • M6080, M60811, M60812, M60819, M60821, M60822, M60829, M60831, M60832, M60839, M60841, M60842, M60849, M60851, M60852, M60859, M60861, M60862, M60869, M60871, M60872, M60879, M6088, M6089, M609, M791, M797, M79601, M79602, M79603, M79604, M79605, M79606, M79609, M79621, M79622, M79629, M79631, M79632, M79639, M79641, M79642, M79643, M79644, M79645, M79646, M79651, M79652, M79659, M79661, M79662, M79669, M79671, M79672, M79673, M79674, M79675, M79676 (muscle / soft-tissue limb pain) • G933, R530, R531, R5381, R5383 (fatigue) • G441, R51 (headache)
Non-Hospital Outpatient Visits	Measure defined by Dartmouth Institute: BETOS M1A, M1B, M4A, M4B, M5A, M5C, M5D, M6
Professional Encounters	
Primary Care Encounters	Claim type description = 'Professional' and type of setting = 'Provider' and provider specialty based on taxonomy coding is pediatrics, internal medicine, family practice, nurse practitioner, or physician assistant
Medical Specialist Encounters	Claim type description = 'Professional' and type of setting = 'Provider' and provider specialty coding based on taxonomy coding is allergy/immunology, cardiology, critical care, dermatology, endocrinology, gastroenterology, geriatric medicine, hematology/oncology, infectious disease, neurology, nephrology, pulmonary medicine, rheumatology, emergency medicine
Surgical Specialist Encounters	Claim type description = 'Professional' and type of setting = 'Provider' and provider specialty coding based on taxonomy coding is the following surgical specialty types: general surgery, cardio-thoracic, ENT, hand, neurological, plastic/reconstructive, OB/GYN, ophthalmology, orthopedic, pediatric, urology, vascular
Diagnostic Testing	
Standard Imaging	BETOS I1A–I1F
Advanced Imaging	BETOS I2A–I2D
Echography	BETOS I3A–I3F
Colonoscopy	BETOS P8D
Admissions	
Prevention Quality Indicator #05: COPD *	This measure assesses the observed rate of Ambulatory Care Sensitive (ACS) admissions with a principal diagnosis of chronic obstructive pulmonary disorder (COPD) or asthma per 1,000 members, ages 40 years and older. The specified diagnosis codes can be found on the AHRQ website.
Prevention Quality Indicator #08: Heart Failure *	This measure assesses the observed rate of ACS admissions with a principal diagnosis of heart failure per 1,000 members, ages 18 years and older. The specified diagnosis codes can be found on the AHRQ website.
Prevention Quality Indicator #92: Composite (Chronic) *	This measure assesses the observed rate of ACS admissions for the composite of chronic conditions per 1,000 members, ages 18 years and older. The measure includes admissions for at least one of the following conditions: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications,

Category/Measure	Methods/Coding
	diabetes with lower-extremity amputations, chronic obstructive pulmonary disorder (COPD), asthma, hypertension, heart failure, and angina without a cardiac procedure. The specified diagnosis codes for these conditions can be found on the AHRQ website.
Measurement of Plan All-Cause Readmissions	This measure represents a comparison of the rate of (a) continuously enrolled members, ages 18 years and older, that had an inpatient stay followed by an acute readmission for any diagnosis within 30 days during the measurement year to (b) the expected rate of readmissions given risk factors of the patient (i.e., presence of surgeries, discharge condition, comorbidity, age, and gender). The rate is expressed as a ratio of the observed to expected readmissions where the expected number of readmissions has been risk-adjusted. Because the risk probabilities for this measure are generated by NCQA, neither the statewide ratio nor the national ratio is the typical 1.0. The ratio should be used to compare the relative difference between practices and HSAs.

* When comparing to AHRQ's national benchmarks for the observed rate, it is important to keep in mind that AHRQ guidelines suggest including the entire population for the specified area in the denominator. The rates provided in the Blueprint HSA Profiles are based on members attributed to Blueprint participating practices for which the denominator is the sum of average members for the specified area.

Measurement of Effective & Preventive Care

Primary measures of effective and preventive care were selected for inclusion in the adult and pediatric Blueprint HSA Profiles. While it is beyond the scope of this document to provide all of the detailed specifications for each effective and preventive care measure, the denominator and numerator for each are summarized below. Since health plans may supplement claims data with medical chart reviews, the effective and preventive care measures reported in the Blueprint HSA Profiles are not directly comparable to summary HEDIS rates reported by NCQA or health plans.

Comprehensive Diabetes Care

HEDIS Measure

These measures assess the percentage of members, ages 18–75 years, with diabetes who had HbA1c testing, eye screening, and nephropathy screening. This is a claims-based measure.

The denominator for these measures consists of members, ages 18–75 years, who were identified with diabetes who had one or more inpatient visits, one or more outpatient emergency department visits, or two or more non-hospital outpatient visits with ICD-9 diagnosis codes of 250, 357.2, 362.0, 366.41, and 648.0 or ICD-10 diagnosis codes of E10, E11, E13, and O24 or who were dispensed insulin oral hypoglycemics/antihyperglycemics during the measurement year or the prior year. The denominator also requires the member to be continuously enrolled during the measurement year.

The numerators for these measures were identified using specific CPT and other coding as defined in the NCQA HEDIS specification manual for HbA1c testing, eye screening, and nephropathy screening. The numerator indicates that the test or screening took place during the measurement year.

Tobacco Use: Screening & Cessation Intervention

NQF #0028

This measure assesses the percentage of members ages 18 years and older that were screened for tobacco use one or more times within a two-year look-back and who received cessation counseling intervention if identified as a tobacco user.

The denominator for this measure includes all members, ages 18 years and older, who were seen for at least two visits or at least one preventive visit during the measurement period. The denominator also requires the member to be continuously enrolled during the measurement year. Excluded from the denominator were members with documentation of medical reason(s) for not screening for tobacco use (e.g., limited life expectancy or other medical reason). The numerator for this measure were members who were screened for tobacco use at least once within 24 months and who received tobacco cessation intervention if identified as a tobacco user.

Medication Management for People with Asthma

NQF #1799, HEDIS Measure

This measure assesses the percentage of members, ages 18–85 years, that were identified as having persistent asthma and were dispensed appropriate asthma controller medications that they remained on for at least 50 percent of their treatment period.

The denominator for this measure includes all members, ages 18–85 years, as having persistent asthma who met event/diagnosis and asthma medication criteria during both the measurement year and the year prior to the measurement year. Excluded from the denominator were members who had any diagnosis from specified value sets, and members who had no asthma controller medications during the measurement year. The numerator for this measure represents the number of members who achieved a proportion of days covered (PDC) of at least 50% for their asthma controller medications during the measurement year.

Screening for Clinical Depression

NQF #0418

This measure assesses the percentage of members, ages 18 years and older, that were screened for clinical depression on the date of encounter using an age-appropriate standardized depression screening tool.

The denominator for this measure included all members, ages 18 years and older, before the beginning of the measurement period with at least one eligible encounter during the measurement period. Excluded from the denominator are members with an active diagnosis for

depression or a diagnosis of bipolar disorder. The numerator for this measure includes members screened for clinical depression on the date of the encounter using an age-appropriate, standardized tool.

Follow-Up After Discharge from the Emergency Department for Alcohol or Other Drug Dependence

NQF #2605, HEDIS Measure

This measure assesses the percentage of ED visits for members, ages 18 years and older, with a principal diagnosis of alcohol or other drug (AOD) dependence, who had a follow up visit for AOD dependence within 30 days of the ED visit.

The denominator for this measure is an ED visit with a principal diagnosis of AOD dependence on or between January 1 and December 1 of the measurement year and is based on ED visits, not on members. The denominator excludes ED visits followed by an admission to an acute or nonacute inpatient care setting on the date of the ED visit or within 30 days after the ED visit regardless of principal diagnosis for the admission. The numerator includes members with a follow-up visit with any practitioner, with a principal diagnosis of AOD dependence, within 30 days after the ED visit, including visits that occur on the date of the ED visit.

Follow-Up After Discharge from the Emergency Department for Mental Health

NQF #2605, HEDIS Measure

This measure assesses the percentage of ED visits for members, ages 18 years and older, with a principal diagnosis of mental illness, who had a follow-up visit for mental health within 30 days of the ED visit.

The denominator for this measure is an ED visit with a principal diagnosis of mental illness on or between January 1 and December 1 of the measurement year and is based on ED visits, not on members. The denominator excludes mental-illness visits followed by an admission to an acute or nonacute inpatient care setting on the date of the ED visit or within 30 days after the ED visit regardless of principal diagnosis for the admission. The numerator includes members with a follow-up visit with any practitioner and who had a principal diagnosis of a mental health disorder, within 30 days after the ED visit, including visits that occur on the date of the ED visit.

Imaging Studies for Low Back Pain

HEDIS Measure

This measure assesses the percentage of members, ages 18–50 years, with a primary diagnosis of low back pain who did not have an imaging study (i.e., plain X-ray, MRI, CT scan) within 28

days of diagnosis. A higher percentage indicates appropriate treatment (i.e., the proportion for whom imaging was not performed).

The denominator requires members to have one of the following visit types with a principal diagnosis of uncomplicated low back pain as identified by a particular combination of CPT and UB revenue codes in the claims data: an outpatient visit, an observation visit that is not inpatient, an ED visit that is not inpatient, an osteopathic or chiropractic manipulative treatment, a physical therapy visit, or a telehealth visit. Members are included if they had a 180-day negative diagnosis history. Members with a history of cancer, recent trauma, intravenous drug use, neurological impairment, HIV, spinal infection, major organ transplants, or prolonged use of corticosteroids are excluded from the denominator. Members must be continuously enrolled during the 208-day period (i.e., the required 180-day history plus 28 days post diagnosis). The numerator identifies any member with an imaging study, identified by CPT and UB revenue codes in the claims data, with a diagnosis of uncomplicated low back pain on the index episode start date (IESD) or in the 28 days following the IESD. Denied claims are not included when assessing the numerator, but all claims (paid, suspended, pending and denied) are included when identifying the eligible population.

Cervical Cancer Screening

Core-30, NQF #0032, HEDIS Measure

This measure assesses the percentage of women either (a) ages 21–64 years who received one or more Papanicolaou (Pap) tests to screen for cervical cancer during the measurement year or the two years prior to the measurement year or (b) ages 30–64 years who received one or more Pap tests to screen for cervical cancer during the measurement year or four years prior to the measurement year. This is a claims-based measure.

The denominator requires continuous enrollment in Medicaid during the measurement year or in commercial during the measurement year and the two years prior to the measurement year. Women with evidence of a hysterectomy are excluded. The numerator is based on identification of CPT, HCPCS, ICD-9, ICD-10, and UB revenue codes in the claims data that indicate a Pap test.

Chlamydia Screening

Core-7, NQF #0033, HEDIS Measure

This measure assesses the percentage of female members, ages 16–24 years, identified as sexually active and who had at least one test for chlamydia in the measurement year. This is a claims-based measure.

The denominator requires 11 months of enrollment during the measurement year and sexual activity as determined by pharmacy data (e.g., dispensed contraceptives) or claims or

encounters indicating sexual activity (e.g., pregnancy, pregnancy tests, chlamydia tests, or other claims related to sexual activity).

The chlamydia screening measure has been included for ages 16–24 years in both the adult and pediatric HSA profiles.

Breast Cancer Screening

Core-11, MSSP-20, NQF #0031, HEDIS Measure

This measure assesses the percentage of women, ages 52–74 years, who had a mammogram to screen for breast cancer during the measurement year or the prior year. For the Blueprint HSA Profiles, the measure was stratified further, differentiating between women, ages 52–64 years, and women, ages 65–74 years. This is a claims-based measure.

The denominator requires continuous enrollment during the two-year period. Women with evidence of bilateral mastectomy are excluded. The numerator is based on the identification of CPT, HCPCS, ICD-9, ICD-10, and Uniform Billing (UB) revenue codes in the claims data that indicate a mammogram.

Plan All-Cause Readmissions

Core-1, NQF #1768, HEDIS Measure

This measure represents a comparison of the rate of (a) continuously enrolled members, ages 18 years and older, that had an inpatient stay followed by an acute readmission for any diagnosis within 30 days during the measurement year to (b) the expected rate of readmissions given risk factors of the patient (e.g., presence of surgeries, discharge condition, comorbidity, age, and gender). The rate is expressed as a ratio of the observed to expected readmissions where the expected number of readmissions has been risk-adjusted.

Because the risk probabilities for this measure are generated by NCQA, neither the statewide ratio nor the national ratio is the typical 1.0. The ratio should be used to compare the relative difference between HSAs. Rates are not comparable to data run for prior versions of the Blueprint profiles due to changes to the NCQA HEDIS specifications in 2017.

Follow-Up After Hospitalization for Mental Illness

Core-4, NQF #0576, HEDIS Measure

This measure assesses the percentage of discharges for members, ages six years and older, who were hospitalized for treatment of selected mental health diagnoses and who had an outpatient visit, an intensive outpatient encounter, or a partial hospitalization with a mental

health provider in which the member received a follow-up visit within seven days of discharge. This is a claims-based measure. This measure is not reported in the Pediatric Profiles.

The denominator is based on discharges, not members. For inclusion, individuals must be discharged alive from an acute inpatient setting (including an acute care psychiatric facility) with a principal diagnosis of mental illness on or between the first and last day of the measurement year. Members must be continuously enrolled for inclusion. Follow-up criteria must include a visit with a mental health practitioner, a visit to a behavioral healthcare facility, a visit to a non-behavioral healthcare facility with a mental health provider, and/or a visit to a non-behavioral healthcare facility with a diagnosis of mental illness.

Initiation of Alcohol/Drug Treatment

Core-5a, NQF #0004, HEDIS Measure

This measure assesses the percentage of adult members, ages 18 years and older, with a new episode of alcohol or other drug (AOD) dependence who initiated treatment through an inpatient AOD dependence admission, outpatient visit, intensive outpatient encounter, or partial hospitalization within 14 days of the diagnosis. This is a claims-based measure.

The denominator or index episode could be an outpatient visit or partial hospitalization with a diagnosis of AOD dependence, a detoxification visit, an ED visit with a diagnosis of AOD dependence, or an inpatient discharge with a diagnosis of AOD dependence. Members must be continuously enrolled without any gaps from two months before the index episode through 44 days after. When the adolescent numerator is insufficient for reporting, this measure will not appear in the pediatric HSA profiles.

If the index episode is an inpatient discharge, the member is considered compliant. Otherwise, if the index episode is an outpatient, intensive outpatient, partial hospitalization, detoxification, or ED visit, the member must have an inpatient admission, outpatient visit, intensive outpatient encounter or partial hospitalization with a diagnosis of AOD dependence within 14 days of the index episode.

Engagement of Alcohol/Drug Treatment

Core-5b, NQF #0004, HEDIS Measure

This measure assesses the percentage of adult members, ages 18 years and older, with a new episode of alcohol or other drug (AOD) dependence who initiated treatment and who had two or more additional services with a diagnosis of AOD dependence within 30 days of the initiation visit. This is a claims-based measure.

The denominator or index episode could be an outpatient visit or partial hospitalization with a diagnosis of AOD dependence, a detoxification visit, an ED visit with a diagnosis of AOD

dependence, or an inpatient discharge with a diagnosis of AOD dependence. Members must be continuously enrolled without any gaps from two months before the index episode through 44 days after. When the adolescent numerator is insufficient for reporting, this measure will not appear in the pediatric HSA profiles.

Engagement is measured as initiation of AOD dependence treatment and two or more inpatient admissions, outpatient visits, intensive outpatient encounters, and/or partial hospitalizations with any AOD dependence diagnosis within 30 days after the date of the initiation encounter (inclusive).

Cholesterol Management, Cardiac

Core-3, MSSP-29, NQF #0075, HEDIS Measure

This measure assesses the percentage of members, ages 18–75 years, who were discharged alive for acute myocardial infarction (AMI), coronary artery bypass graft (CABG), or percutaneous coronary intervention (PCI) in the year prior to the measurement year or who had a diagnosis of ischemic vascular disease (IVD) during the measurement year and the year prior to the measurement year, who had low-density lipoprotein cholesterol (LDL-C) screening during the measurement year. This is a claims-based measure.

The denominator requires no more than one gap of enrollment of as many as 45 days during the measurement year. The denominator includes (a) members discharged alive during the measurement year from an acute inpatient setting with an AMI as identified by facility and professional claims, (b) members discharged alive during the measurement year from an acute inpatient setting with a CABG as identified by facility and professional claims, (c) members who had a PCI in any setting during the measurement year, and (d) members who, in the measurement year and year prior, had at least one outpatient visit or acute inpatient encounter with a diagnosis of IVD.

LDL-C tests had to be performed during the measurement year as identified by claim/encounter data or automated laboratory data.

Avoidance of Antibiotic Treatment, Acute Bronchitis

Core-6, NQF #0058, HEDIS Measure

This measure assesses the percentage of members, ages 18–64 years, with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription. A higher rate indicates appropriate treatment for acute bronchitis (i.e., the proportion for whom antibiotics were not prescribed). This is a claims-based measure.

The denominator for this measure is based on episodes of acute bronchitis. For inclusion, members must have continuous enrollment from one year prior to the episode date to seven

days after the episode date. Episodes included any outpatient visit, observation visit, or ED visit with a diagnosis of acute bronchitis during the measurement year. Exclusions were made for emergency department (ED) visits that resulted in an inpatient admission for certain comorbid conditions, including HIV, malignant neoplasms, emphysema, chronic obstructive pulmonary disease (COPD), and cystic fibrosis. Members who were on antibiotics prior to the episode or who had competing diagnoses (e.g., pharyngitis) also were excluded.

Influenza Vaccination

Core-35, MSSP-14, NQF #0041, AMA-PCPI

This measure assesses the percentage of members, ages 18 years and older, who received an influenza immunization from October 1 of the prior year through March 31 of the measurement year (i.e., the most recent flu season for the United States). Immunizations were identified using both claims data and the Blueprint Clinical Registry data.

The denominator included members who had been seen for a visit in the office setting during that same flu season period (October 1 to March 31). Office visits were identified using the claims data CPTs for office visits.

The numerator for this measure was determined using two parts:

- Claims data: Individuals who had evidence in the claims data of receipt of the flu vaccination in any setting were determined to be in compliance with this measure.
- Blueprint Clinical Registry data: For each individual who met the denominator criteria and whose VHCURES member ID was linked to a Blueprint Clinical Registry ID, the measures table of the Blueprint Clinical Registry data extract was searched to determine if there was any evidence during the flu season that the provider had reported that the patient received a vaccination. This second step was intended to capture patients who may have reported to their provider that they received the vaccine but who received it in a setting (e.g., flu clinic, drug store, etc.) where it was not billed to medical claims.

Pneumonia Vaccination

Core-48, MSSP-15, NQF #0043

Pneumonia vaccination rates are one of the measures used by many Accountable Care Organizations. However, information on pneumonia vaccinations coming from claims data are not reliable because the measure asks if the patient has *ever* had a pneumonia vaccination. Thus, these are not highly traceable by medical claims as patients may have had the vaccination before VHCURES began collecting data. Vermont, however, does collect data on pneumonia vaccinations using the Behavioral Risk Factor Surveillance System (BRFSS). Vermont adults, ages 65 years and older, were asked if they had ever received a pneumococcal vaccine. It is

important to note that previously vaccinated subjects were not asked to specify when they had received the vaccine. BRFSS data for 2015–2016 were aggregated at the HSA level and presented for the over-65 population to explore variation between HSAs in this preventive behavior. These data do not reflect specifically on the Blueprint practices, however, as they are a general population indicator.

ACS Admissions: COPD & Asthma

Core-10, MSSP-9, NQF, AHRQ Prevention Quality Indicator #5

The ambulatory care sensitive (ACS) conditions inpatient measures were derived by the application of the Prevention Quality Indicator (PQI) software from the Agency for Healthcare Research and Quality (AHRQ) to the Vermont data. These are conditions for which quality outpatient care can potentially prevent the need for hospitalization or for which early intervention can prevent complications or more severe disease.

This measure assesses the observed rate of ACS admissions with a principal diagnosis of chronic obstructive pulmonary disorder (COPD) or asthma per 1,000 members, ages 40 years and older. The specified diagnosis codes can be found on the AHRQ website. This is a claims-based measure.

For the numerator, observed discharges from an acute care hospital with a principal diagnosis of COPD or asthma were included. Exclusions were made for the following: (1) transfers from a hospital, skilled nursing facility, or intermediate care facility; (2) members with a diagnosis of cystic fibrosis and anomalies of the respiratory system; and (3) members with missing data for gender, age, or principal diagnosis.

Note: When comparing to AHRQ's national benchmarks for the observed rate, it is important to keep in mind that AHRQ guidelines suggest including the entire population for the specified area in the denominator. The rates provided in the Blueprint HSA Profiles are based on members attributed to Blueprint participating practices for which the denominator is the sum of average members for the specified area.

ACS Admissions: Heart Failure

MSSP-10, NQF #0277, AHRQ Prevention Quality Indicator #8

This measure assesses the observed rate of ambulatory care sensitive (ACS) admissions with a principal diagnosis of heart failure per 1,000 members, ages 18 years and older. The specified diagnosis codes can be found on the AHRQ website. This is a claims-based measure.

For the numerator, observed discharges from an acute care hospital with a principal diagnosis of heart failure were included. Exclusions were made for the following: (1) transfers from a hospital, skilled nursing facility, or intermediate care facility; (2) members with an ICD-9-CM or

an ICD-10-CM procedure code for a cardiac procedure; and (3) members with missing data for gender, age, or principal diagnosis.

Note: When comparing to AHRQ's national benchmarks for the observed rate, it is important to keep in mind that AHRQ guidelines suggest including the entire population for the specified area in the denominator. The rates provided in the Blueprint HSA Profiles are based on members attributed to Blueprint participating practices for which the denominator is the sum of average members for the specified area.

ACS Admissions: PQI Composite (Chronic)

Core-12, NQF, AHRQ Prevention Quality Indicator (Chronic Composite)

This measure assesses the observed rate of ambulatory care sensitive (ACS) admissions for the composite of chronic conditions per 1,000 members, ages 18 years and older. The measure includes admissions for at least one of the following conditions: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputations, chronic obstructive pulmonary disorder (COPD), asthma, hypertension, heart failure, and angina without a cardiac procedure. The specified diagnosis codes for these conditions can be found on the AHRQ website. This is a claims-based measure.

Observed discharges from an acute care hospital that meet the inclusion and exclusion criteria for the numerator for any of the above conditions were included. Exclusions were made for the following: (1) transfers from a hospital, skilled nursing facility, or intermediate care facility and (2) members with missing data for gender, age, or principal diagnosis.

Note: When comparing to AHRQ's national benchmarks for the observed rate, it is important to keep in mind that AHRQ guidelines suggest including the entire population for the specified area in the denominator. The rates provided in the Blueprint HSA Profiles are based on members attributed to Blueprint participating practices for which the denominator is the sum of average members for the specified area.

Diabetes Outcome Measures

Core-16; MSSP-22, -23, -24, -25; NQF #0729 (composite)

These measures assess the percentage of members, ages 18–75 years, with diabetes who were in control for various diabetes outcome measurements (i.e., HbA1c, blood pressure, and tobacco non-use).

The denominator for these outcome measures consists of members, ages 18–75 years, who were identified with diabetes who had one or more inpatient visits, one or more outpatient emergency department visits, or two or more non-hospital outpatient visits with ICD-9

diagnosis codes of 250, 357.2, 362.0, 366.41, and 648.0 or ICD-10 diagnosis codes of E10, E11, E13, and O24 or who were dispensed insulin oral hypoglycemics/antihyperglycemics during the measurement year or the year prior to the measurement year. The denominator also requires the member to be continuously enrolled during the measurement year. Additionally, members must be linked to the Blueprint Clinical Registry database and have at least one measurement in the database for the measure in question (e.g., to be included in the HbA1c in control measure, a member would have to be identified as having diabetes by the claims, be linked to Blueprint Clinical Registry data, and have a valid HbA1c measurement in the Blueprint Clinical Registry during the measurement year). Because of these criteria, there are fewer members with diabetes for these measures than for the comprehensive diabetes care measures described above.

Key information specific to each of the diabetes measures is described here:

- Diabetes in poor control (Core-17, MSSP-27, NQF #0059): To be included in the denominator for diabetes in poor control, members identified in claims as having diabetes had to be linked to the Blueprint Clinical Registry and have a valid HbA1c measurement in the measurement year. The numerator was based on the most recent HbA1c measurement in the measurement year. If the HbA1c was greater than 9%, the member was considered "in poor control." This measure is presented as an inverse measure. HSAs with poor control had a higher rate for this measure.

- Blood pressure in control (MSSP-24): To be included in the denominator for blood pressure in control, members identified in claims as having diabetes had to be linked to the Blueprint Clinical Registry and have a valid blood pressure measurement in the measurement year. The lowest blood pressure at the most recent visit was examined for the numerator. If the systolic blood pressure was less than 140 mm/Hg and the diastolic blood pressure was less than 90 mm/Hg, the member was considered "in control."

- Tobacco Non-Use (MSSP-25): To be included in the denominator for the tobacco non-use measure, members identified in claims as having diabetes had to be linked to the Blueprint Clinical Registry and have a valid indicator of tobacco non-use. If, at any time during the year, the individual was marked as a tobacco user, they were considered "in poor control" for this measure. Those who were consistent non-users were considered "in control."

- Diabetes Care Two-Part Composite: To be included in the denominator for the diabetes composite measure, members identified in claims as having diabetes had to be linked to the Blueprint Clinical Registry with a valid HbA1c measurement during the measurement year. The numerator included any of those members whose HbA1c was in control (the inverse of Core-17) and who received an eye screening for diabetic retinal disease.

For some HSAs, the volume of linked clinical data was insufficient to report these measures. This was particularly true for the diabetes composite measure, which required blinding for denominators of fewer than 30 and numerators of fewer than 11.

Comparison of Patients by HbA1c Control Status

An additional analysis was conducted to examine the effect of diabetes control on expenditures and utilization. For the measurement year, Blueprint-attributed members with HbA1c in control (<9%) were identified. This group was compared to members with HbA1c in poor control (≥9%). Adjusting for differences in age, gender, and health status between the two groups, rates of expenditures per person (and associated 95% confidence intervals) were calculated for both groups. Also, the mean adjusted rates of inpatient hospitalizations, inpatient days, and outpatient ED visits were calculated for the measurement year and presented side by side with 95 percent confidence intervals to see if the two groups had different patterns of use and cost.

Hypertension: Blood Pressure in Control

Core-39, MSSP-28, NQF #0018, HEDIS Measure

This measure assesses the percentage of members, ages 18–85 years, with hypertension whose last recorded blood pressure measurement in the claims and Blueprint Clinical Registry data was in control (<140/90 mmHg).

The denominator for this measure consists of members, ages 18–85 years, who had at least one inpatient claim or two or more outpatient or professional claims with a diagnosis of essential hypertension within a two-year look-back period. The denominator also requires the member to be continuously enrolled during the measurement year and to be linked to the Blueprint Clinical Registry database. In addition, patients must have at least one valid blood pressure measurement in the Blueprint Clinical Registry database to be included.

The numerator is based on the most recent visit during which a measurement was taken. The lowest valid blood pressure measurement during the most recent visit was examined. If the systolic blood pressure was less than 140 mm/Hg and the diastolic blood pressure was less than 90 mm/Hg, the member was considered "in control." If one of those two components, however, was not in control, the individual was considered to be noncompliant.

Behavioral Risk Factor Surveillance System (BRFSS) Measures

Additional measures based on data from the Behavioral Risk Factor Surveillance System (BRFSS) are included in the HSA profiles to provide context regarding key risk factors and diagnoses. The risk factors included: households with income of less than $25,000 annually, cigarette smoking, no leisure-time physical activity/exercise, those with a personal doctor. Diagnoses include: COPD, hypertension, and diabetes. Estimates of these risk factors were reported at the HSA level with 95% confidence intervals. See the BRFSS section in the adult Blueprint Profiles for further detail on these measures. For more information on BRFSS methods, please see the Vermont Department of Health BRFSS page and the CDC's website on BRFSS.

Pediatric Measure: Developmental Screening in the First Three Years of Life

Core-8, NQF #1448

This measure assesses the percentage of children screened for risk of developmental, behavioral, and social delays using a standardized screening tool in the first three years of life: by 12 months of age, by 24 months of age, and by 36 months of age.

The denominator includes children who turn 1, 2, or 3 years of age between January 1 and December 31 of the measurement year. The numerator identifies children who were screened for risk of developmental, behavioral and social delays using a standardized tool:

- Numerator 1: Children in Denominator 1 who had screening for risk of developmental, behavioral, and social delays using a standardized screening tool that was documented by their first birthday
- Numerator 2: Children in Denominator 2 who had screening for risk of developmental, behavioral, and social delays using a standardized screening tool that was documented by their second birthday
- Numerator 3: Children in Denominator 3 who had screening for risk of developmental, behavioral, and social delays using a standardized screening tool that was documented by their third birthday
- Numerator 4: Children in Denominator 4 who had screening for risk of developmental, behavioral, and social delays using a standardized screening tool that was documented by their first, second, or third birthday.

Pediatric Measure: Well-Child Visits in the 3rd to 6th Year of Life

HEDIS Measure

This measure assesses the percentage of members, ages 3–6 years, who received one or more well-child visits during the measurement year.

The denominator includes only those members who are continuously enrolled during the year. The numerator includes children with at least one visit to a primary care physician during the measurement year. Well-child visits are identified with preventive visit CPT codes or ICD-9 V20, V70 codes and ICD-10 Z00, Z02 codes. Primary care practitioners are identified through taxonomy codes indicating that the rendering provider was a pediatrician, family practitioner, internal medicine physician, nurse practitioner, or physician assistant.

Pediatric Measure: Adolescent Well-Care Visits

Core-2, HEDIS Measure

This measure assesses the percentage of members, ages 12–21 years, who had at least one well-care visit with a primary care practitioner or OB/GYN during the measurement year.

The denominator includes only members who are continuously enrolled during the year. Well-care visits are identified with preventive visit CPT codes or ICD-9 codes V20, V70 and ICD-10 codes Z00, Z02. Practitioners are identified through taxonomy codes indicating that the rendering provider was a pediatrician, family practitioner, internal medicine physician, nurse practitioner, physician assistant, or OB/GYN.

Pediatric Measure: Appropriate Testing for Children with Pharyngitis

Core-13, NQF #0002

This measure assesses the percentage of children, ages 3–18 years, who were diagnosed with pharyngitis, dispensed an antibiotic, and received a group A streptococcus (strep) test for the episode. A higher rate represents appropriate testing for children with pharyngitis.

The denominator includes members with an outpatient, observation, or ED visit with a diagnosis of only pharyngitis (ICD-9 codes 462, 463, and 034.0 and ICD-10 codes J02 and J03). Claims/encounters with more than one diagnosis and visits that result in an inpatient stay are excluded. Members are excluded from the denominator if dispensed an antibiotic prescription within 30 days prior to the episode start date or have an active prescription on the episode start date. Numerator is a streptococcus test (identified through CPT codes) during the seven-day period (i.e., three days prior and three days after the prescription date).

Pediatric Measure: Appropriate Treatment for Children with Upper Respiratory Infection

HEDIS Measure

This measure assesses the percentage of children, ages 1–17 years, who were diagnosed with upper respiratory infection (URI) and were not dispensed an antibiotic prescription. A higher rate indicates appropriate treatment of children with URI (i.e., the proportion for whom antibiotics were not prescribed). This is a claims-based measure.

The denominator consists of members with an outpatient or ED visit with a diagnosis of URI (ICD-9 codes 460 and 465 and ICD-10 codes J00 and J06). Claims/encounters with more than one diagnosis are excluded. Members also are excluded if there is a competing diagnosis within three days of the initial diagnosis or if they had an antibiotic prescription filled within the prior 30 days. The numerator consists of members who were prescribed an antibiotic either on the

same day as or during the three days after the diagnosis date. The measure is expressed as the percentage who received appropriate care (i.e., were not dispensed an antibiotic).

Linked Clinical Data: Obesity, Hypertension, & HbA1c

Starting with the data for calendar year 2014, Blueprint began to integrate clinical data from the statewide Blueprint Clinical Registry (formerly DocSite). This table presents the proportion of distinct members and distinct members with diabetes linked to clinical data with valid body mass index (BMI), blood pressure, and HbA1c measurements meeting the criteria for obesity (BMI ≥ 30.0), hypertension (mmHg ≥ 140/90), and HbA1c in poor control (>9%).

The top, blue section of Table 8, below, shows the rates of availability of clinical measures, obesity, and hypertension for all distinct adult members in the profile, while the bottom, green section shows the rates of availability of clinical measures, hypertension, obesity, and HbA1c for distinct adult members with diabetes. For distinct members with diabetes, the age range was restricted to ages 18–75 years to conform to NCQA HEDIS specifications.

The overall number of distinct members in the practice are provided in the headings. The "N = Count of Distinct Members" will be higher than the "Average Members" reported on the profiles' first page, which adjusts for partial lengths of enrollment. The indented row labels indicate that they are reporting a subset of the distinct members from the row immediately above; in these cases, the member numerator of the preceding row (not shown) served as the denominator.

Table 8. Measure Descriptions for the "Linked Clinical Data: Obesity & Hypertension, & HbA1c" Table

Measure	Description
% linked to clinical data	Percent of distinct members who were linked to clinical data and who had data for at least one clinical measurement
% with BMI data	Percent of distinct members who have a valid Body Mass Index measurement
% meeting obesity criteria	Among the distinct members who had a valid Body Mass Index measurement, percent who met the obesity criteria
% with blood pressure data	Percent of distinct members who have a valid blood pressure measurement
% meeting hypertension criteria	Among the distinct members who had a valid blood pressure measurement, percent who met the hypertension criteria
% with BMI and blood pressure data	Percent of distinct members with diabetes who had both a valid blood pressure measurement and a valid Body Mass Index measurement
% meeting obesity and hypertension criteria	Among the distinct members who had both a valid Body Mass Index measurement and a valid blood pressure measurement, percent who met the obesity and hypertension criteria
% linked to clinical data	Percent of distinct members with diabetes who were linked to clinical data and who had data for at least one clinical measurement
% with BMI data	Percent of distinct members with diabetes who had a valid Body Mass Index measurement
% meeting obesity criteria	Among the distinct members with diabetes who had a valid Body Mass Index measurement, percent who met the obesity criteria
% with blood pressure data	Percent of distinct members with diabetes who had a valid blood pressure measurement
% meeting hypertension criteria	Among the distinct members with diabetes who had a valid blood pressure measurement, percent who met the hypertension criteria

Measure	Description
% with valid HbA1c	Percent of distinct members with diabetes who had both a valid HbA1c measurement
% with HbA1c >9%	Among the distinct members who had both a valid HbA1c measurement, percent who met the HbA1c >9% criteria

Patient Experience Survey Data

Blueprint HSA Profiles include a section for patient experience based on the Consumer Assessment of Healthcare Providers and Systems (CAHPS) Patient Centered Medical Home (PCMH) survey data. Patient experience data is a required component of PCMH recognition by NCQA. There are two versions of the survey: one for the adult population (ages 18 years and older) and another for the pediatric population (ages 17 years and younger) based on the parent's experience with the child's practice. The survey is conducted by DataStat, Inc., which compiles and reports the resulting data in accordance with NCQA standards. If CAHPS PCMH survey data is not available for an HSA, then the Blueprint HSA Profile will omit figures that typically display these survey results. For the rolling year 2017 profiles, the measurement period for the patient experience survey data is the 6-month period from 3/18/2017 through 9/17/2017.

The key areas of care for the adult survey include: Access, communication, office staff, self-management support, and information. The key areas of care for the pediatric survey include: Access, communication, office staff, and information. Two additional focus areas, coordination of care and specialists, are not standard in the CAHPS PCMH but have been included in the Vermont survey.

A composite measure for each key area of care was computed by averaging the responses to individual questions within each key area and is presented graphically in figures in the profiles with 95% confidence intervals. NCQA does not have a composite measure benchmark for coordination of care or for specialists, which have been created for these profiles. Individual questions and responses are reported in the tables, which show the denominator (N) for each question, the rate (%), and the margin of error (+/-), which reflects the degree of uncertainty of the measure at the 95% confidence level. Cells in the table have been blinded if the numerator of the response was fewer than 11, in adherence to CMS blinding rules.

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