DEPARTMENT OF HEALTH AND HUMAN SERVICES
Patient Protection and Affordable Care Act; Minimum Value Calculator Methodology
AGENCY: Department of Health and Human Services

This document is accompanying the Minimum Value Calculator, which is being released in conjunction with the final rule for determining minimum value, finalized as 45 CFR 156.145. The options for calculating minimum value are outlined in the final rule, *Patient Protection and Affordable Care Act; Standards Related to Essential Health Benefits, Actuarial Value, and Accreditation*, published in the Federal Register at 78 CFR 12834 (February 25, 2013).

Introduction:

In the Essential Health Benefits, Actuarial Value, and Accreditation final rule (EHB Final Rule), HHS finalizes the use of a minimum value (MV) Calculator to determine the percentage of the total allowed costs of benefits provided under a group health plan or health insurance coverage. Section 36B(c)(2)(C)(ii) of the Internal Revenue Code of 1986 (26 U.S.C. § 36B(c)(2)(C)(ii)) provides that an employer-sponsored plan provides MV if this percentage is no less than 60 percent. The MV Calculator is now available for informal external testing. HHS invites testers to send any technical issues or operational concerns to **minimumvalue@cms.hhs.gov** as soon as possible. If necessary, HHS will release a revised version of the MV Calculator.

The MV Calculator produces an empirical estimate of the actual average spending by a wide range of consumers representative of those currently enrolled in self-insured employer-sponsored plans (45 CFR 156.145(c)). Although producing an exact calculation of a very complex interaction of use of health care services is not possible in a tool that is publicly available and able to accommodate the majority of group health plans, the results provided by this MV Calculator ensure that the determination of whether a group health plan provides MV is made in compliance with the Affordable Care Act and regulatory standards.

This document provides a detailed description of the data underlying the MV Calculator and the calculator's methodology. The first section ("Data Sources and Methods") details the data and methods used in constructing the continuance tables that are used to calculate MV in combination with the user inputs. The second section ("MV Calculator Interface and Calculation of MV") describes the MV Calculator interface and the calculation of MV. The MV Calculator generally uses the same logic and methodology as the actuarial value (AV) Calculator; however, the MV Calculator uses a different standard population and continuance tables.

Data Sources and Methods:

This section describes the data and methods used to create the building blocks of the MV Calculator. The inputs for the MV calculation are information on utilization and total costs for health services found in the continuance tables for a population of health plan enrollees resembling those likely to be covered by large group employer-sponsored health insurance in 2014, as well as specific cost-sharing data. This information is used to create continuance tables that describe the distribution of claims spending for that population of health insurance users.

The remainder of this document outlines the process for creating and using each of these components in turn. The first subsection describes the large national claims database that was

used as the basis for utilization information for individuals in employer-sponsored plans. In addition, preliminary adjustments to that database are described in the first section. The second subsection describes the methodology for using the claims database to develop the continuance tables.

National Database

To provide information on utilization and cost sharing for a standard population of enrollees, HHS began with claims data from the MarketScan Commercial Claims and Encounters Database, identified for self-insured employer plans. This database consists of employer- and health plan-sourced data containing information on enrollment and medical and prescription services utilization for a large sample of individuals in employer-provided health plans, including employees, their spouses, and dependents. The plans covered include a variety of service modes, such as preferred provider organizations (PPOs) and health maintenance organizations (HMOs).

The data contains spending, demographic and enrollment information at the member level, including age, sex, family structure, enrollment, spending, member cost-sharing, and number of claims from contract year 2009. All cost data in the database are trended forward to 2014. The population represented in the MarketScan data over-represents enrollees in the South. The construction of the continuance tables and adjustments to this data to construct the tables, described below, account for this feature of the data.

Spending and claims information is provided in the database both for total services and for each of the following medical and drug service categories:

- Emergency Room Services
- All Inpatient Hospital Services (including mental health and substance use disorder services)
- Primary Care Visit to Treat an Injury or Illness (exc. Preventive Well Baby, Preventive, and X-rays[1])
- Specialist Visit
- Mental/Behavioral Health and Substance Abuse Disorder Outpatient Services
- Imaging (CT/PET Scans, MRIs)
- Rehabilitative Speech Therapy
- Rehabilitative Occupational and Rehabilitative Physical Therapy
- Preventive Care/Screening/Immunization

[1] If special cost-sharing provisions are indicated for Primary Care and/or Specialist Office Visits, certain office visits will be split into their component parts only if those office visits include services that do not have special cost-sharing provisions (not having special cost-sharing provisions is defined as being Subject to Deductible, Subject to Coinsurance, with no special coinsurance rate and no copay). This is applicable to X-rays, and the component parts are Primary Care Office Visit, Specialist Office Visit, and Other. For example, if Primary Care office visits are not subject to the deductible and have a $20 copay, but X-rays are subject to the deductible and general coinsurance, a Primary Care office visit that includes an X-ray will be split into two services, a Primary Care office visit and an X-ray.

- Laboratory Outpatient and Professional Services
- X-rays and Diagnostic Imaging
- Skilled Nursing Facility
- Outpatient Facility Fee (e.g., Ambulatory Surgery Center)
- Outpatient Surgery Physician/Surgical Services
- Drug Categories
    - Generics
    - Preferred Brand Drugs
    - Non-Preferred Brand Drugs
    - Specialty Drugs

The database is used to break down whether a service and associated cost is considered part of outpatient surgery, physician/surgical services or outpatient facility fees for the following service categories: mental/behavioral health and substance use disorder outpatient services, imaging (CT/PET Scans, MRIs), rehabilitative speech therapy, rehabilitative occupational and rehabilitative physical therapy, laboratory outpatient and professional services, and unclassified (medical). In developing the continuance tables, we relied on this aspect of the database to account for separate copayments and cost sharing payments applying to the professional and facility components of services.

Preventive care is defined, and claims are categorized, using the CPT code list from the U.S. Preventive Services Task Force. The services defined as preventive care correspond to the preventive services covered without cost sharing under section 2713 of the Affordable Care Act. A grandfathered plan, however, is not required to cover these services without cost sharing under section 1251 of the Affordable Care Act. The MV Calculator permits a grandfathered group health plan to enter these plan design parameters manually to reflect the additional flexibility provided to grandfathered plans in this area.

To prepare the data for use in the continuance tables, several enrollment restrictions are applied to ensure that the data represent a full year of utilization experience in a single plan for enrollees. The full data include 49,225,778 enrollees and 215 plans. Restricting to self-insured employer-provided data for enrollees as of January 1, 2009 brings the count down to 16,371,927 enrollees and 209 plans. To further restrict the data, we include only PPO enrollees with a full year of enrollment, enrollees who died within the year, newborns, and enrollees who did not change plans during the year. These restrictions produced a sample of 2,158,013 enrollees and 163 plans. Finally, plans with utilization data that analysis determines are likely incomplete are excluded. Specifically, to be included, plans must have prescription drug costs greater than 5 percent of total spending and less than 55 percent of total spending. After these restrictions, the database contains 1,271,322 enrollees and 70 plans.

Constructing Continuance Tables

Continuance tables summarize the claims experience and utilization of the relevant population and are therefore the key input to calculating minimum value. Specifically, a continuance table describes the distribution of claims spending for a population of health insurance users. The set of continuance tables underlying the MV Calculator reflects the population expected to be enrolled in employer-sponsored plans outside of the small group market. The continuance tables are available along with the MV calculator for transparency purposes at http://cciio.cms.gov/resources/regulations/index.html.

The continuance tables rank enrollees by allowed total charges (after any provider discounts but before any member cost-sharing) and group them by ranges of spending. These ranges of spending define the rows of the continuance table. The data are then used to calculate the number of enrollees with total spending falling within each range, the cumulative average cost in the range for all enrollees, and the average cost for all enrollees whose total spending falls within the range. For each service type listed above, the columns of the continuance table display the average cost of spending on that service type that is attributed to cumulative enrollees in each range and the average frequency of the service type per enrollee.

To account for the specific geographic composition of the MarketScan data in constructing the continuance tables, enrollees are separated into groups based on region, and a separate continuance table is constructed from the underlying utilization data for each region.

To produce a single national continuance table, the regional continuance tables representing each regional group are aggregated into a single continuance table, with each region weighted by expected market enrollment in employer-sponsored plans. Expected market participation for each region is estimated by a model developed by HHS to predict 2014 insurance enrollment. This model utilizes 2007-2011 data from the U.S. Census Bureau's Current Population Survey[2]. The model uses variables such as size of Advanced Premium Tax Credits, availability of employer-sponsored insurance (ESI), and eligibility for Medicaid to predict whether individuals enroll in an Exchange qualified health plan, ESI, Medicaid, or another source of coverage or whether they remain uninsured. The HHS model predicts the share that each region represents of the full ESI enrollee population in 2014, including the small group market.

Separate continuance tables for medical services and prescription drugs underlie the MV Calculator to accommodate the input of benefit structures with separate deductibles for these types of spending. To estimate costs for a plan with a separate drug benefit, the continuance tables must include only non-drug claims to determine actuarial value for the medical portion of the plan. To produce a single MV figure for this type of plan, the plan-covered spending on drugs and medical services are added together and divided by total spending.

The MV Calculator Interface and Calculation of MV:

This section describes the MV Calculator interface and how inputs into the calculator are used to determine whether a group health plan meets the MV threshold. The inputs for the calculator were determined through a combination of consultation with actuarial experts and testing the magnitude of the effect of parameters on the calculated actuarial value. The calculator is

[2] For more information on this survey, see http://www.census.gov/cps/.

designed to produce a summarized MV figure rounded to the nearest tenth of a percentage point based on the continuance tables described above and the cost sharing inputs described below.

Plan Benefit Features Allowed as Inputs

Plan design structures are characterized by cost-sharing features that determine the division of expenses between the plan and the insured. The ratio of the share of total costs paid by the plan relative to the total costs of covered services is the anticipated covered medical spending for covered benefits paid by a group health plan for a standard population, computed in accordance with the plan's cost-sharing, and divided by the total anticipated allowed charges for covered benefits provided to a standard population; it is reflected as a percentage that is the MV figure of the plan. No summary calculator could capture every single potential plan variation. However, empirically, the majority of the variation between the MVs of group health plans is captured by a finite number of variables, and the calculator focuses on accurately determining plan actuarial values based on this set of key plan characteristics. Therefore, the calculator includes only these key characteristics that have a significant effect on actuarial value.

The user inputs a combination of cost-sharing features, and the MV Calculator uses these inputs and the continuance tables to produce an MV figure for the group health plan.

Deductibles, general rates for coinsurance, and out-of-pocket maximums generally have a significant effect on utilization and the share of plan-covered expenses. The MV Calculator allows the user to specify either an integrated deductible that applies to both medical and prescription expenses or separate deductibles for each type of spending. Similarly, if a plan design has separate medical and drug maximum out-of-pocket (MOOP) spending limits, the user may specify either an integrated MOOP or separate MOOPs for medical and drug spending. For grandfathered plans, the user may enter a MOOP up to a limit of $20,000; non-grandfathered plans may enter a MOOP up to $6,500. Utilizing the same underlying logic and formulas, the MV Calculator takes into account the higher MOOP that a grandfathered plan may have when determining if a grandfathered plan provides MV. The user may also specify different coinsurance rates for medical and drug spending.

The MV Calculator allows the user to specify coinsurance rates and copayments for the medical services listed above, which have a less significant effect on actuarial value than the deductible, general coinsurance, and out-of-pocket maximum. In addition, the MV Calculator considers whether they are subject to deductible.

Unless the user chooses the option indicating a grandfathered plan, the MV Calculator does not allow the user to subject recommended preventive care to a copay or deductible because the Affordable Care Act directs that these services be covered by the plan at 100%.[3] If the grandfathered plan option is selected, the user may enter cost-sharing that applies to those services.

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[3] For the purposes of the MV Calculator, preventive care means the services required to be covered without cost sharing under the ACA and its implementing regulations. *See* 45 C.F.R. § 147.130 and 77 Fed. Reg. 16501 (Mar. 21, 2012).

The MV Calculator also allows users to specify other plan details. For inpatient and skilled nursing facility services, the default option is that copayments and coinsurance costs apply per stay, but these may be applied at the per day level by choosing the corresponding options. If inpatient copayment costs are applied per day, the user may specify that these copayments only apply for a set number of days chosen by the user, ranging from the first one to ten days in the hospital. Users may also specify that cost sharing for primary care visits only applies after a set number of visits chosen by the user, ranging from one to ten visits. Alternatively, users may specify that the deductible or coinsurance does not apply to primary care services until after a set number of visits, ranging from one to ten visits; during this initial set of visits, the enrollee pays a per-visit primary care copayment. Users may specify cost-sharing for four tiers of prescription drugs: generics, preferred brand drugs, non-preferred brand drugs, and specialty high-cost drugs. Additionally, the user may specify that for specialty tier drugs, the enrollee pays the lesser of either the specialty drug coinsurance or a set dollar limit chosen by the user. The calculator also incorporates health savings accounts (HSAs) and health reimbursement arrangements (HRAs) that are integrated with group health plans if the amounts may only be used for cost-sharing; to use this option the user must include an annual amount contributed by the employer or in the case of HRAs, the amount first made available (sometimes referred to in this document as “HRA contributions”).

Group health plans typically apply very different cost-sharing structures to in-network and out-of-network utilization. However, our empirical analysis of the claims database and other analyses by the American Academy of Actuaries indicate that relatively little utilization actually occurs out of network in terms of total dollars. For standard group health plans with in-network and out-of-network tiers, the calculator therefore produces estimates of actuarial value based only on in-network utilization and allows the user to specify only in-network cost-sharing parameters.

Consistent with the Final Rule, plans utilizing a two-tiered network may be accommodated by the MV Calculator. Users may input separate cost-sharing parameters—such as deductibles, coinsurance rates, MOOPs, and schedules for service-specific copayments and coinsurance—and specify the share of utilization that occurs within each tier. The resulting actuarial value is a blend of the MV figure for the two tiers.

Because large employer plans are not required to cover the essential health benefits (EHB), the MV Calculator allows the user to indicate that a service listed in the calculator is not covered. In order to account for the shift in the total per member per year (PMPY) average spending distribution when removing carved-out services, the following adjustment is performed. First, the proportion of average spending that the carved out services account for is calculated for every point in the continuance tables. This proportion is then multiplied by the ratio between the total spending level and average per member per year spending for enrollees capped at that spending level, and then subtracted from the total spending level. This creates a new continuance distribution with modified total spending but unmodified utilization rates. The MV calculation proceeds regularly, with carved-out services subject to the deductible, 0% coinsurance, and their MOOP removed from the numerator but not from the denominator of the MV calculation.

Determining Whether a Plan Provides Minimum Value

MV is calculated as the cost of benefits covered by a group health plan as a percentage of total allowed costs of benefits under the plan. Under our final rule, the denominator of this calculation is simply the average allowed cost of all services for the standard population in the year; the numerator is calculated as the share of average allowed cost covered by the plan, using the cost-sharing parameters specified.

The remainder of this section describes each step in the calculation of minimum value for the various plan designs that may be specified by the user. Before proceeding with the calculation, the calculator checks that the user has specified the necessary deductibles, coinsurance, and MOOPs consistent with the choice of integrated or separate deductibles and MOOPs for medical and drug expenses. The calculator also checks that the deductible is less than the MOOP, confirms that the MOOP (or sum of the MOOPs, for plans with separate medical and drug MOOPs) is less than $6,500 for non-grandfathered plans, [4] and calculates a floor on the level of spending at which the MOOP will apply.

Under our proposal to use an MV Calculator, if the user's chosen inputs for deductible and MOOP are not exactly equal to the spending thresholds used in constructing the continuance table, the values are pro-rated using linear interpolation. For instance, if a user enters a $150 deductible, then the calculator estimates the amount of spending below the deductible by interpolating between the average cost per enrollee that occurs below the $100 threshold on the continuance table and the average cost per enrollee that occurs below the $200 threshold on the continuance table. In this case, if the average cost per enrollee at the $100 threshold was $85 and the average cost per enrollee at the $200 threshold was $185, the interpolated average cost per enrollee would be $135 (halfway between $85 and $185).

[4] CMS has estimated that the MOOP allowable by law in 2014 will be $6,400 extrapolated from the 2013 maximum of defined by the IRS: http://www.irs.gov/pub/irs-drop/rp-12-26.pdf. The MV Calculator allows for a MOOP up to 6,500 to ensure that once the maximum is defined, the calculator will be able to accommodate a slightly higher actual allowed MOOP.

Step 1: Calculate Average Expenses over all Enrollees

The denominator of the MV calculation is the average cost over all enrollees, found in the final row of the corresponding continuance table in the column for average cost.

Step 2: Calculate Expenses Covered by Employer Contributions to HSA and HRA, if Applicable

Consistent with § 156.145(d), employer contributions to an HSA or amounts first made available in HRAs that are integrated with group health plans (if the amounts may only be used for cost-sharing) are counted toward minimum value by treating HSA and HRA contributions the same way the calculator treats any other plan. For example, a $1,000 HSA employer contribution is treated in the MV Calculator as if a plan with a $1,000 deductible is reduced to $0. The $1,000 HSA contribution does not get counted as $1,000 in the numerator of the MV Calculator because the equation is based on expected spending for a standard total population, not for individuals. Instead the $1,000 contribution is counted as the average dollar value it would cost to reduce a $1,000 deductible to $0.

When the HSA or HRA Employer Contribution box is checked and the entered annual contribution amount is positive, the calculator treats this as covered "first-dollar" spending for covered services. Specifically, the benefit is applied as if the annual contribution amount is applied at the very beginning of an enrollee's spending in a benefit year, and so applies to enrollee spending that is less than or equal to the deductible.

To be considered in this way, the MV Calculator requires that the HSA or HRA annual contribution amount be less than or equal to the deductible for the purposes of including the HSA or HRA contribution in the actuarial value of the plan. The MV Calculator uses the continuance table for combined expenses to identify the average cost per enrollee at the annual HSA or HRA contribution amount. If the annual contribution amount falls between two spending thresholds in the continuance table, this amount is pro-rated as described in the previous section. The pro-rated amount is plan-covered expenses and is included in the numerator. Next, the calculator identifies any plan-covered benefits obtained in the deductible stage and subtracts them from the numerator, to avoid double-counting when these benefits are included in the numerator during the regular benefit calculation steps described in Step 3: Calculate Plan-Covered Expenses for Spending Below Deductible Amount below. At the conclusion of these steps, plan-covered expenses in the numerator include average costs at the annual HSA or HRA contribution amount less any plan-covered expenses in the deductible stage below the HSA or HRA contribution amount.

We note that while the MV Calculator cannot accommodate situations in which the HSA or integrated HRA employer contribution exceed the deductible, the value of the account can still be accommodated by using the alternative methods for MV calculation allowed under §156.145(a)(3).

Step 3: Calculate Plan-Covered Expenses for Spending Below Deductible Amount

The MV calculator next computes any plan-covered expenses for spending below the amount of the deductible for each benefit type and includes these expenses in the numerator. The

computation process depends on whether the plan includes separate medical and drug deductibles or a combined deductible. For plans with a combined ("integrated") deductible, the calculator computes the deductible portion of the benefit in the same way for both medical and drug benefit types. For plans with separate deductibles, the calculator computes the deductible portion of the benefit separately for medical and drug benefit types. This section first describes the computation process that applies to plans with combined deductibles and to medical benefits in plans with separate deductibles, and then describes the computation for drug benefit types in plans with separate deductibles.

For plans with a combined deductible, the calculator computes plan-covered expenses in the deductible range for all medical and drug benefit types listed in the calculator, relying on the continuance table for combined expenses. For plans with separate deductibles, the calculator uses only medical benefit types and utilizes the continuance table for medical expenses. The process for calculating plan-covered expenses for a given benefit type varies depending on whether the benefit type is subject to the deductible or to a copayment as follows:

- If the benefit type is subject to neither deductible nor copayment, the plan covers all spending on that benefit type below the deductible. The calculator identifies the average cost of that benefit listed in the row of the continuance table corresponding to spending at the plan deductible (which may be pro-rated, if necessary). This is total per-member spending for this benefit in the relevant range, all of which is included in plan-covered expenses.
- If the benefit type is subject to copayment but not deductible, the plan covers all spending on that benefit type in this range, less enrollee copayments. The calculator identifies the average cost of that benefit, as above. Next, the calculator divides this amount by the benefit type frequency to estimate the per-service cost. Subtracting the copayment for the benefit type from the per-service cost produces plan-covered expenses per service for this benefit type. The calculator multiplies this result by the benefit type frequency to produce total plan-covered expenses for the benefit type. This is added to the total plan covered expenses. The calculator may use one of several variations on this process to compute plan-covered spending, depending on whether the user selects options that affect how the calculator applies copays or general cost-sharing requirements.[5] In this instance, the calculator computes plan-

[5] Variations on the process include the following: (a) If the user limits IP copays to a set number of days, the MV Calculator compares the IP frequency at the Annual HSA Contribution Amount to the set number of days. If the IP frequency is less than or equal to the set number of days, the calculation proceeds normally. However, if the IP frequency is greater than the set number of days, the MV Calculator multiplies the set number of days by the copay and subtracts the resulting total copay spending from the average cost of the benefit to compute plan-covered spending. (b) If the user selects the option restricting primary care cost sharing to care after a set number of visits, the Calculator first determines whether or not the primary care frequency at the Annual HSA Contribution Amount exceeds the set number of visits. If the frequency is less than or equal to the set number of visits, the copay does not apply and the plan-covered spending equals the full value of average cost for that service. However, if the frequency is greater than the set number of visits, the MV Calculator subtracts the set number of visits from the frequency and multiplies the result by the copay to obtain total enrollee copay spending. The MV Calculator then subtracts total enrollee copay spending from the average cost for that service to compute total plan-covered spending.

covered spending based on the average spending and frequency for each benefit type at the deductible level.

- If the benefit type is subject to deductible and is among a subset of benefit types that have both a professional and facility component (mental health and substance use, advanced imaging, rehabilitative speech therapy, occupational and physical therapy, and diagnostic laboratory), and if the plan has no separate deductible for outpatient professional and/or facility services, the calculator follows the process described in the prior two bullets for the outpatient professional and outpatient facility portions of the service category. The calculator determines whether to follow the process described in the first or second bullet for the outpatient professional and outpatient facility portions based on the deductible and copayment requirements for those two benefit types.
- For x-ray, diagnostic imaging, and non-preventive well baby benefits, if they are subject to deductible and if primary care and/or specialist office visit benefits are not subject to deductible, the calculator applies the steps laid out in the first two bullets to the primary care and specialist portions of those service categories. The calculator determines whether to follow the process described in the first or second bullet for the primary care and specialist portions based on the deductible and copayment requirements for those two benefit types.
- For primary care services, if the user specifies that the deductible and/or coinsurance applies only after a set number of visits with copayments, the calculator compares the set number of copay visits to the frequency of visits when total average spending is equal to the deductible. If the frequency of visits is less than or equal to the set number of copay visits, then the calculator uses the process described in the second bullet to compute plan-covered expenses. However, if the frequency of visits exceeds the set number of copay visits, the calculator computes the per-service cost for spending at the deductible using the process described in the second bullet. The calculator then computes total plan-covered spending at the deductible by multiplying this per-service cost by the set number of copay visits and subtracting from the result the set number of copay visits multiplied by the copay amount.

To calculate plan-covered expenses up to the amount of the deductible for drugs in plans with separate medical and drug deductibles, the calculator relies on the continuance tables for the plan metal tier that are constructed from drug claims. For each drug benefit type, the calculator identifies the average cost for that benefit listed in the row of the continuance table that corresponds to the plan drug deductible (which may be pro-rated, if necessary). If the benefit type is not subject to either deductible or copayment, the calculator adds this per-member spending amount to the total plan-covered expenses in full. If the benefit type is subject to copayment but not deductible, the calculator divides average cost for that benefit by the frequency for the benefit type to estimate the per-service cost. The calculator next subtracts the copayment for the benefit type from the per-service cost and multiplies the resulting value by the benefit-type frequency to produce total plan-covered expenses for the benefit type. This result is added to the total plan-covered expenses.

At the conclusion of these steps, plan-covered expenses in the numerator include all plan-covered expenses for spending up to the amount corresponding to the deductible.

The calculator also tracks the average cost per enrollee at the amount of the deductible, which is used in later steps. For plans with an integrated deductible, this is the average cost per enrollee at a level of spending equal to the deductible, listed in the corresponding row of the combined continuance table. For plans with separate deductibles, this is the sum of the average cost per enrollee at spending equal to the medical deductible, listed in the corresponding row of the medical continuance table, and the average cost per enrollee at spending equal to the drug deductible, listed in the corresponding row of the drug continuance table. For plans with separate medical and drug deductibles, the calculator uses the drug-claim continuance table to track the average cost per enrollee corresponding to the plan drug deductible (which may be pro-rated); this value is also used in later steps.

Step 4: Determine Applicable Spending Level for MOOP

To identify the spending level at which an enrollee will hit the MOOP, the calculator first determines a modified MOOP that takes into consideration benefit types excluded from coinsurance. It examines each medical and drug benefit type and if a benefit has a copayment, the calculator multiplies this copayment by the average frequency at the deductible for the benefit type. The resulting value, which represents the amount of copayment an enrollee pays for that benefit type at the deductible, is subtracted from the MOOP to obtain the amount that an enrollee would have to pay in coinsurance for the remaining service types before reaching the MOOP limit. The calculator may use one of several variations on this process to compute the amount of copay an enrollee pays for each benefit type, depending on whether the user selects options that affect how the calculator applies copays or general cost-sharing requirements. In this instance, the calculator computes total copay spending based on the average spending and frequency for each benefit type at the deductible level. Additionally, if the user specifies that primary care services are subject to copays for a set number of visits before the deductible and/or coinsurance applies, the calculator subtracts from the MOOP the lesser of the following two amounts: either the frequency of primary care visits at the deductible multiplied by the copay amount or the set number of copay visits multiplied by the copay amount.

If the benefit type is subject to coinsurance and is among a subset of benefit types that have both a professional and facility component (mental health, substance use, imaging, pediatric vision, pediatric dental, rehabilitative speech therapy, occupational therapy, physical therapy, and laboratory), and if the plan has no coinsurance requirements for outpatient professional and/or facility services, the calculator applies the process described in the prior paragraph to the outpatient professional and facility portions of the service category. To do so, the calculator relies on the coinsurance and copayment requirements for outpatient professional and outpatient facility services.

Similarly, for x-ray and non-preventive well baby benefits, if they are subject to coinsurance and if primary care and/or specialist office visit benefits are not subject to coinsurance, the calculator applies the process described in the first paragraph of this section to the primary care and specialist portions of the service category. To do so, the calculator relies on the coinsurance and copayment requirements for primary care and specialist office visits.

Upon completion of these adjustments, the resulting "modified MOOP" represents the amount that an enrollee would have to pay in coinsurance for all remaining service types before reaching the MOOP limit. If the plan has separate MOOPs for medical and drug spending, the calculator carries out the above steps separately for medical and drug benefit types and their corresponding

MOOPs, producing a modified MOOP for medical spending and a modified MOOP for drug spending.

Next, the calculator computes the spending level at which the modified MOOP will apply. To do so, the calculator subtracts the deductible from the modified MOOP and divides the resulting value by one minus the coinsurance rate, or the percentage of costs borne by the enrollee for services subject to coinsurance; it then adds the deductible to this value to calculate the total amount of spending at which out-of-pocket costs paid by the enrollee reach the modified MOOP. The calculator matches this amount to the appropriate row in the combined continuance table to obtain the average cost per enrollee at the modified MOOP limit. For plans with separate MOOPs, the calculator performs this process separately for medical and drug benefits and their corresponding deductibles, modified MOOPs, and continuance tables to obtain separate average cost estimates for medical and drug spending at the relevant modified MOOP.

While the modified MOOP created by this adjustment does not capture the precise effect of copayments, it provides a value that adequately fulfills the needs of the remaining calculation steps. Small differences between the modified MOOP calculated by this method and the exact MOOP that applies are unlikely to have a significant effect on the output of the MV Calculator.

Step 5: Calculate Plan-Covered Expenses for Spending Between the Deductible and the MOOP

To calculate expenses covered by the plan in the coinsurance range (that is, the plan's spending for services when spending is between the amount corresponding to the deductible and the amount corresponding to the modified MOOP), the calculator examines each of the medical and drug benefits listed in the calculator to determine whether they are subject to coinsurance and copayment. The computation for each benefit type depends on the coinsurance and copayment requirements applying to that type. First, the calculator computes plan-covered expenses for benefits not subject to the overall plan coinsurance rate or benefits subject to the overall plan coinsurance rate within set limits. Second, the calculator computes the average cost per enrollee at the modified MOOP adjusted for costs for all services not subject to the overall plan coinsurance rate. Finally, this adjusted average cost is used to compute plan-covered expenses for benefits subject to the overall plan coinsurance rate. The narrower the range between the deductible and the MOOP, as in the case for bronze plans, the smaller the role this computation plays in the overall actuarial value of the plan.

The calculator computes plan-covered expenses for benefits not subject to the overall plan coinsurance rate and benefits subject to a restricted form of the plan coinsurance rate as follows:

- For each benefit type that is subject to coinsurance at a coinsurance rate different from the overall plan coinsurance rate, the calculator subtracts the average cost of that benefit corresponding to spending at the deductible from the average cost of that benefit corresponding to spending at the modified MOOP to obtain the average costs for that benefit that are attributed to spending in the range between the deductible and the modified MOOP. Multiplying this average cost by the benefit's coinsurance rate

produces plan-covered expenses for this benefit in the range, which are included in the numerator.[6]

- For each benefit type subject to copayment but not coinsurance, the calculator divides average cost at the deductible for that benefit by the frequency for that benefit type to estimate the per-service cost at that spending level. The calculator then subtracts the benefit copayment from the per-service cost and multiplies the result by the benefit frequency to produce plan-covered spending for the benefit corresponding to spending at the deductible. Next, the calculator follows a similar process to calculate plan-covered spending for the benefit corresponding to spending at the modified MOOP. Finally, the calculator subtracts plan-covered spending at the deductible from plan-covered spending at the modified MOOP and adds the resulting value to the total plan-covered spending. The calculator may use one of several variations on this process, similar to those described above in the section on HSAs and HRAs, to compute plan-covered spending, depending on whether the user selects options that affect how the calculator applies copays or general cost-sharing requirements. In this instance, the calculator computes plan-covered spending at the deductible level based on the average spending and frequency for each benefit type at the deductible level, and it follows an analogous process to compute plan-covered spending at the modified MOOP level.
- If the benefit type is subject to coinsurance and is among a subset of benefit types that include both a facility and professional component (mental health and substance abuse, advanced imaging, rehabilitative speech therapy, occupational and physical therapy, and diagnostic laboratory), and if outpatient professional and/or facility services are not subject to coinsurance, the calculator applies the process described in the first two bullets to the outpatient professional and outpatient facility portions of the service category. The calculator determines whether to follow the process described in the first or second bullet for the outpatient professional and outpatient facility portions based on the coinsurance and copayment requirements for those two benefit types.
- For x-ray, diagnostic imaging, and non-preventive well baby benefits, if they are subject to coinsurance and if primary care and/or specialist office visit benefits are not subject to coinsurance, the calculator applies the steps laid out in the first two bullets to the primary care and specialist portions of those service categories. The calculator determines whether to follow the process described in the first or second

[6] If specialty high-cost drugs are subject to coinsurance at a coinsurance rate different from the overall plan coinsurance rate and if the user selects the option to limit the amount of beneficiary cost sharing on specialty high-cost drugs, the calculator compares this specialty-drug spending limit to the beneficiary cost-sharing amount under the specialty-drug coinsurance rate. To compute this latter value, the MVC multiplies the average cost for the benefit in the range between the deductible and the MOOP by one minus the specialty-drug coinsurance rate. If the beneficiary cost-sharing amount is less than or equal to the specialty-drug spending limit, the calculation proceeds as described above. However, if the beneficiary cost-sharing amount exceeds the specialty-drug spending limit, the MVC computes plan-covered spending in the range between the deductible and the modified MOOP by subtracting the specialty-drug spending limit from the average cost of the specialty drug benefit in this range.

bullet for the primary care and specialist portions based on the coinsurance and copayment requirements for those two benefit types.

- For specialty high-cost drugs, if they are subject to the plan coinsurance rate and if the user selects the option to limit the amount of beneficiary cost sharing on those drugs, the calculator follows a process analogous to that described above to determine whether the beneficiary cost-sharing amount for spending between the deductible and the modified MOOP exceeds the specialty-drug spending limit. If the beneficiary cost-sharing amount is less than or equal to the specialty-drug spending limit, the calculator treats the benefit as subject to plan coinsurance and incorporates it into the numerator using the process described below. However, if the beneficiary cost-sharing amount exceeds the specialty-drug spending limit, the calculator computes plan-covered spending by subtracting the spending limit from the average cost for that benefit between the deductible and the modified MOOP.
- For primary care, if the benefit is subject to plan or benefit-specific coinsurance and if the user selects the option to begin cost sharing after a set number of visits, the calculator compares the set number of visits to the frequency for primary care at the modified MOOP. If the set number of visits is less than or equal to the frequency at the modified MOOP, then plan-covered spending equals the difference between the average cost of services at the modified MOOP and the average cost of services at the deductible. However, if the set number of visits is greater than the frequency at the modified MOOP, the calculator computes the beneficiary cost-sharing amount by subtracting the set number of visits from the frequency and multiplying the result by the coinsurance rate. The calculator then computes plan-covered spending by subtracting the beneficiary cost-sharing amount from the difference between the average cost of services at the modified MOOP and the average cost of services at the deductible.[7]

At the completion of these steps, the numerator includes plan-covered expenses in the range of spending between the MOOP and deductible for all services except those that are subject to the plan's overall coinsurance rate.

Next, to account for spending on services already considered in this step, the calculator subtracts the sum of the average cost for each of those services from average cost per enrollee for spending at the modified MOOP to obtain adjusted average cost at the modified MOOP.

Finally, the process for computing plan-covered expenses in the coinsurance range for the remaining benefit types depends on both whether the plan has integrated or separate deductibles and whether the deductible or deductibles equal the MOOP. If the plan has an integrated deductible, plan-covered expenses for services not already considered in this step (i.e., services subject to the overall plan coinsurance rate) are equal to the coinsurance rate multiplied by

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[7] The calculator follows a similar process if primary care services are subject to coinsurance and the user specifies that cost-sharing only applies after a set number of visits with copays. If the set number of copay visits is less than or equal to the frequency for primary care at the modified MOOP, the calculator computes plan-covered spending in this range using the process described above but subtracting the copay amount multiplied by the frequency for primary care at the modified MOOP. Similarly, if the set number of copay visits exceeds the frequency at the modified MOOP, the calculator computes plan-covered spending in this range as described above but contracting the copay amount multiplied by the copay visit limit.

spending on these remaining services. This spending is calculated as the difference between average cost at the level corresponding to the modified MOOP, adjusted as described above for spending on services already considered in this step, and average cost at the level corresponding to the deductible.

If the plan has separate medical and drug deductibles and an integrated MOOP, the remaining plan-covered expenses in this range have two components. The first component, for medical spending, is equal to the coinsurance rate multiplied by spending on medical services in the range between the modified MOOP and deductible. This spending is calculated as the difference between average cost at the level corresponding to the modified MOOP, adjusted as described above for spending on services already considered in this step, and average cost for medical benefits subject to the plan's overall coinsurance rate at spending corresponding to the medical deductible, less the difference between average cost at the deductible and average cost for all drug benefits at the deductible. That is, the calculator adjusts both the modified MOOP and the deductible for costs attributed to drugs so that spending on medical services can be considered separately. The second component, for drug spending, is calculated in a parallel manner, and is equal to the drug coinsurance rate multiplied by drug spending in the range between the modified MOOP and deductible. This spending is computed as the difference between average cost for drug benefits subject to the plan's overall coinsurance rate at spending corresponding to the modified MOOP and average cost for all drug benefits at the drug deductible. Again, the calculator adjusts both the modified MOOP and the deductible for costs attributed to medical services so that spending on prescription drugs can be considered separately.

If the medical deductible for a plan with separate deductibles is equal to the MOOP, the calculator computes the medical component using a coinsurance rate equal to one, because all medical expenses in this range are covered by the plan. If the drug deductible is equal to the MOOP, the calculator computes the drug component using a drug coinsurance rate equal to one, because all drug expenses in this range are covered by the plan.

For plans with separate MOOPs for medical and drug spending, the calculator uses a variation of the process described above: calculating plan-covered expenses separately for medical and drug spending falling between the corresponding separate deductibles and modified MOOPs.

First, for benefits not subject to the overall plan coinsurance rate or benefits subject to a restricted form of the plan coinsurance rate, the calculator uses the same process as described above to calculate spending between the deductible and the modified MOOP, but it uses the medical deductible and modified MOOP for calculations involving medical benefits and the drug deductible and modified MOOP for drug benefits. At the conclusion of this step, the numerator includes plan-covered expenses in the range of spending between each benefit type's corresponding MOOP and deductible for all services except those that are subject to the plan's overall unrestricted coinsurance rate.

Second, the calculator subtracts the sum of the average cost of medical services not subject to the unrestricted plan coinsurance rate from the average cost per enrollee at the modified medical MOOP, and performs a corresponding calculation for drug services not subject to the unrestricted plan coinsurance rate. This step adjusts the average costs for medical and drug benefits at the corresponding modified MOOPs to account for spending on benefits not subject to the unrestricted plan coinsurance rate.

Finally, for benefits subject to the plan coinsurance rate without restriction, the calculator uses a similar process as described above to calculate spending between the deductible and the MOOP; however, this step relies on the separate medical and drug deductibles and modified MOOPs to calculate spending for medical and drug benefits. As in the above process, the calculator computes spending separately for medical and drug benefits. However, it is unnecessary to adjust the deductible and modified MOOP to account for spending in the other benefit type due to the separate medical and drug deductibles and modified MOOPs.

At the conclusion of this step, the numerator includes plan-covered expenses for all spending below the MOOP (or MOOPs).

Step 6: Calculate Plan-Covered Expenses for Spending Above the MOOP

The plan covers all expenses for spending on covered benefits above the MOOP, excluding any spending on service types that are completely carved-out, which can be indicated in the user interface of the MV Calculator. In general, to calculate the amount of this spending, the calculator computes the difference between average cost over all enrollees and average cost at the modified MOOP, and includes the full amount in the numerator. If the plan has separate MOOPs for medical and drug spending, the calculator computes the difference between the average cost for medical benefits over all enrollees and the average cost for medical benefits at the modified medical MOOP and performs a corresponding calculation for drug benefits; the full amount for both benefit types is included in the numerator. At the conclusion of this step, the numerator includes plan-covered expenses over the full range of spending.

Step 7: Apply Network Blending, if Applicable

If the plan is a blended network/POS plan, the calculator multiplies the numerator calculated in step 7 by the portion of total claims cost specified by the user as anticipated to be used in the first tier. The result becomes the preliminary numerator. The calculator then repeats steps 3 through 7, utilizing the information about the deductible, coinsurance rate, MOOP and benefit-specific deductible, coinsurance, and copayment requirements contained in the Tier 2 columns of the calculator to calculate a secondary numerator. This secondary numerator is then multiplied by the portion of total claims cost specified by the user to reflect utilization of the second tier network. Once this process is complete, the calculator adds the preliminary and secondary numerators to produce the new final numerator.

Step 8: Calculate and Determine Whether MV Threshold is Met

In the final step, the calculator computes the final actuarial value amount and determines whether the plan meets the MV threshold (60%).

To compute the actuarial value, the calculator divides the numerator by the denominator. The result is reported as “Minimum Value.” The calculator also produces an output message indicating whether the computed value is equal to or greater than the required 60 percent minimum value.