

## SBCCogCalc Dynamic Link Library

The SBCCogCalc dynamic link library (DLL) is designed to provide a mechanism by which health plans can obtain values for the three coverage examples on page 5 of the Summary of Benefits and Coverage (SBC) Coverage template provided by Centers for Medicare and Medicaid Services (CMS) without manually entering the parameter values into the Excel-based SBC coverage example calculator.

This DLL replaces the BENEFIT\_SUMMARY tab of the Excel Calculator, and produces the results on the RESULTS\_SUMMARY tab of the Excel Calculator.

**The following topics are covered below:**

[Technical Specifications](#)

[Method](#)

[Naming Convention](#)

[Type of Cost Sharing that Applies](#)

[Benefit Deductible](#)

[Co-payment](#)

[Co-insurance](#)

[Coverage Limits Per Month](#)

[Coverage Limits Per Year](#)

[OOP Limit Applies?](#)

[Plan Deductible](#)

[Rx Deductible](#)

[Deductible C](#)

[Deductible D](#)

[OOP Limit](#)

[Properties](#)

## Technical Specifications

Plan 2		Cost sharing			Coverage Limits		OOP limit applies?
Benefit category	Type of cost sharing that applies	Benefit Deductible	Co- payment	Co- insurance	per month	per year	
Inpatient Hospital Care (Facility)	Plan Deductible Only [IHC_CS]	[IHC_BenDed]	[IHC_Copay]	[IHC_Coins]	[IHC_CLMonth]	[IHC_CLYear]	[IHC_OOP]
Other Facility Services	Plan Deductible+Co-pay [OFS_CS]	[OFS_BenDed]	[OFS_Copay]	[OFS_Coins]	[OFS_CLMonth]	[OFS_CLYear]	[OFS_OOP]
Emergency Department (Facility)	Plan Deductible+Co-ins [ED_CS]	[ED_BenDed]	[ED_Copay]	[ED_Coins]	ED_CLMonth]	ED_CLYear]	[ED_OOP]
Ambulance	Copayment Only [A_CS]	[A_BenDed]	[A_Copay]	[A_Coins]	[A_CLMonth]	A_CLYear]	[A_OOP]
Professional Services: Primary Care	Plan Deductible Only [PSPC_CS]	[PSPC_BenDed]	[PSPC_Copay]	[PSPC_Coins]	[PSPC_CLMonth]	[PSPC_CLYear]	[PSPC_OOP]
Professional Services: Emergency Department	Benefit Deductible Only [PSED_CS]	[PSED_BenDed]	[PSED_Copay]	[PSED_Coins]	[PSED_CLMonth]	[PSED_CLYear]	[PSED_OOP]
Professional Services: Specialist	Plan Deductible Only [PSS_CS]	[PSS_BenDed]	[PSS_Copay]	[PSS_Coins]	[PSS_CLMonth]	[PSS_CLYear]	[PSS_OOP]
Professional Services: Obstetric Care (Bundled)	Coinsurance Only [PSOC_CS]	[PSOC_BenDed]	[PSOC_Copay]	[PSOC_Coins]	[PSOC_CLMonth]	[PSOC_CLYear]	[PSOC_OOP]
Professional Services: Procedures & Other	Plan Deductible Only [PSPO_CS]	[PSPO_BenDed]	[PSPO_Copay]	[PSPO_Coins]	[PSPO_CLMonth]	[PSPO_CLYear]	[PSPO_OOP]
Professional Services: Physical Therapy	Plan Deductible+Co-pay [PSPT_CS]	[PSPT_BenDed]	[PSPT_Copay]	[PSPT_Coins]	[PSPT_CLMonth]	[PSPT_CLYear]	[PSPT_OOP]
Diagnostic Services: Radiology	Plan Deductible Only [DSR_CS]	[DSR_BenDed]	[DSR_Copay]	[DSR_Coins]	[DSR_CLMonth]	[DSR_CLYear]	[DSR_OOP]
Diagnostic Services: Laboratory	Plan Deductible Only [DSL_CS]	[DSL_BenDed]	[DSL_Copay]	[DSL_Coins]	[DSL_CLMonth]	[DSL_CLYear]	[DSL_OOP]
Prescription Drugs: Generic	Rx Deductible Only [PDG_CS]	[PDG_BenDed]	[PDG_Copay]	[PDG_Coins]	[PDG_CLMonth]	[PDG_CLYear]	[PDG_OOP]
Prescription Drugs: Branded	Rx Deductible+Co-pay [PDB_CS]	[PDB_BenDed]	[PDB_Copay]	[PDB_Coins]	[PDB_CLMonth]	[PDG_CLYear]	[PDG_OOP]
Over-the-counter Drugs	Not Covered [OTCD_CS]	[OTCD_BenDed]	[OTCD_Copay]	[OTCD_Coins]	[OTCD_CLMonth]	[OTCD_CLYear]	[OTCD_OOP]
Preventive Services & Vaccines	No Cost Sharing [PSV_CS]	[PSV_BenDed]	[PSV_Copay]	[PSV_Coins]	[PSV_CLMonth]	[PSV_CLYear]	[PSV_OOP]
Durable Medical Equipment	Plan Deductible Only [DME_CS]	[DME_BenDed]	[DME_Copay]	[DME_Coins]	[DME_CLMonth]	[DME_CLYear]	[DME_OOP]
Medical Supplies	Plan Deductible Only [MS_CS]	[MS_BenDed]	[MS_Copay]	[MS_Coins]	[MS_CLMonth]	[MS_CLYear]	[MS_OOP]
Over-the-counter Medical Supplies	Not Covered [OTCM_CS]	[OTCM_BenDed]	[OTCM_Copay]	[OTCM_Coins]	[OTCM_CLMonth]	[OTCM_CLYear]	[OTCM_OOP]

Other Items & Services	Not Covered [OIS_CS]	[OIS_BenDed]	[OIS_Copay]	[OIS_Coins]	[OIS_CMonth]	[OIS_CYear]	[OIS_OOP]
Plan Deductible	[PlanDed]						
Rx Deductible	[RxDed]						
Deductible C	[CDed]						
Deductible D	[DDed]						
Individual Out-of-Pocket (OOP) Limit	[OOP]						

## Method

```

CalcAll(string IHC_CS, int IHC_BenDed, int IHC_Copay, double IHC_Coins, int IHC_CLMonth, int IHC_CYear, bool IHC_OOP,
string OFS_CS, int OFS_BenDed, int OFS_Copay, double OFS_Coins, int OFS_CLMonth, int OFS_CYear, bool OFS_OOP,
string ED_CS, int ED_BenDed, int ED_Copay, double ED_Coins, int ED_CLMonth, int ED_CYear, bool ED_OOP,
string A_CS, int A_BenDed, int A_Copay, double A_Coins, int A_CLMonth, int A_CYear, bool A_OOP,
string PSPC_CS, int PSPC_BenDed, int PSPC_Copay, double PSPC_Coins, int PSPC_CLMonth, int PSPC_CYear, bool PSPC_OOP,
string PSED_CS, int PSED_BenDed, int PSED_Copay, double PSED_Coins, int PSED_CLMonth, int PSED_CYear, bool PSED_OOP,
string PSS_CS, int PSS_BenDed, int PSS_Copay, double PSS_Coins, int PSS_CLMonth, int PSS_CYear, bool PSS_OOP,
string PSOC_CS, int PSOC_BenDed, int PSOC_Copay, double PSOC_Coins, int PSOC_CLMonth, int PSOC_CYear, bool PSOC_OOP,
string PSPO_CS, int PSPO_BenDed, int PSPO_Copay, double PSPO_Coins, int PSPO_CLMonth, int PSPO_CYear, bool PSPO_OOP,
string PSPT_CS, int PSPT_BenDed, int PSPT_Copay, double PSPT_Coins, int PSPT_CLMonth, int PSPT_CYear, bool PSPT_OOP,
string DSR_CS, int DSR_BenDed, int DSR_Copay, double DSR_Coins, int DSR_CLMonth, int DSR_CYear, bool DSR_OOP,
string DSL_CS, int DSL_BenDed, int DSL_Copay, double DSL_Coins, int DSL_CLMonth, int DSL_CYear, bool DSL_OOP,
string PDG_CS, int PDG_BenDed, int PDG_Copay, double PDG_Coins, int PDG_CLMonth, int PDG_CYear, bool PDG_OOP,
string PDB_CS, int PDB_BenDed, int PDB_Copay, double PDB_Coins, int PDB_CLMonth, int PDB_CYear, bool PDB_OOP,
string OTCD_CS, int OTCD_BenDed, int OTCD_Copay, double OTCD_Coins, int OTCD_CLMonth, int OTCD_CYear, bool OTCD_OOP,
string PSV_CS, int PSV_BenDed, int PSV_Copay, double PSV_Coins, int PSV_CLMonth, int PSV_CYear, bool PSV_OOP,
string DME_CS, int DME_BenDed, int DME_Copay, double DME_Coins, int DME_CLMonth, int DME_CYear, bool DME_OOP,
string MS_CS, int MS_BenDed, int MS_Copay, double MS_Coins, int MS_CLMonth, int MS_CYear, bool MS_OOP,
string OTCM_CS, int OTCM_BenDed, int OTCM_Copay, double OTCM_Coins, int OTCM_CLMonth, int OTCM_CYear, bool OTCM_OOP,
string OIS_CS, int OIS_BenDed, int OIS_Copay, double OIS_Coins, int OIS_CLMonth, int OIS_CYear, bool OIS_OOP,
int PlanDed = 0, int RxDed = 0, int CDed = 0, int DDed = 0, int OOP = 0)

```

These parameters correspond directly to the BENEFIT\_DESIGN Tab of the SBC Coverage Calculator. Details follow.

## Naming Convention

The following parameter prefixes correspond to the Benefit Categories listed in the SBC Coverage Calculator spreadsheet as follows:

- IHC** = Inpatient Hospital Care (Facility)
- OFS** = Other Facility Services
- ED** = Emergency Department (Facility)
- A** = Ambulance
- PSPC** = Professional Services: Primary Care

**PSED** = Professional Services: Emergency Department  
**PSS** = Professional Services: Specialist  
**PSOC** = Professional Services: Obstetric Care (Bundled)  
**PSPO** = Professional Services: Procedures & Other  
**PSPT** = Professional Services: Physical Therapy  
**DSR** = Diagnostic Services: Radiology  
**DSL** = Diagnostic Services: Laboratory  
**PDG** = Prescription Drugs: Generic  
**PDB** = Prescription Drugs: Branded  
**OTCD** = Over-the-counter Drugs  
**PSV** = Preventive Services & Vaccines  
**DME** = Durable Medical Equipment  
**MS** = Medical Supplies  
**OTCM** = Over-the-counter Medical Supplies  
**OIS** = Other Items & Services

**Type of cost sharing that applies**

Parameters: [IHC\\_CS](#), [OFS\\_CS](#), [ED\\_CS](#), [A\\_CS](#), [PSPC\\_CS](#), [PSED\\_CS](#), [PSS\\_CS](#), [PSOC\\_CS](#), [PSPD\\_CS](#), [PSPT\\_CS](#), [DSR\\_CS](#), [DSL\\_CS](#), [PDG\\_CS](#), [PDB\\_CS](#), [OTCD\\_CS](#), [PSV\\_CS](#), [DME\\_CS](#), [MS\\_CS](#), [OTCM\\_CS](#), [OIS\\_CS](#)

Usage: Required

Type: String

Valid Values: Must be one from the following list and match exactly including spacing

Not covered	Plan Deductible Only	Deductible D Only
No Cost Sharing	Plan Deductible+Co-pay	Deductible D+Co-pay
Copayment Only	Plan Deductible+Co-ins	Deductible D+Co-ins
Coinsurance Only	Deductible C Only	Rx Deductible Only
Benefit Deductible Only	Deductible C+Co-pay	Rx Deductible+Co-pay
Benefit Deductible+Co-pay	Deductible C+Co-ins	Rx Deductible+Co-ins
Benefit Deductible+Co-ins		

**Cost Sharing - Benefit Deductible**

Parameters: [IHC\\_BenDed](#), [OFS\\_BenDed](#), [ED\\_BenDed](#), [A\\_BenDed](#), [PSPC\\_BenDed](#), [PSED\\_BenDed](#), [PSS\\_BenDed](#), [PSOC\\_BenDed](#), [PSPD\\_BenDed](#), [PSPT\\_BenDed](#), [DSR\\_BenDed](#), [DSL\\_BenDed](#), [PDG\\_BenDed](#), [PDB\\_BenDed](#), [OTCD\\_BenDed](#), [PSV\\_BenDed](#), [DME\\_BenDed](#), [MS\\_BenDed](#), [OTCM\\_BenDed](#), [OIS\\_BenDed](#)

Usage: Required for the following [Cost Sharing Types](#), otherwise ignored:

Benefit Deductible Only
Benefit Deductible+Co-pay
Benefit Deductible+Co-ins

Type: Integer

Values: Send the integer value without dollars signs, commas, etc., of the Benefit deductible for each benefit category. If not applicable, can send null or 0; it will be ignored.

**Cost Sharing - Co-Payment**

Parameters: [IHC\\_Copay](#), [OFS\\_Copay](#), [ED\\_Copay](#), [A\\_Copay](#), [PSPC\\_Copay](#), [PSED\\_Copay](#), [PSS\\_Copay](#), [PSOC\\_Copay](#), [PSPD\\_Copay](#), [PSPT\\_Copay](#), [DSR\\_Copay](#), [DSL\\_Copay](#), [PDG\\_Copay](#), [PDB\\_Copay](#), [OTCD\\_Copay](#), [PSV\\_Copay](#), [DME\\_Copay](#), [MS\\_Copay](#), [OTCM\\_Copay](#), [OIS\\_Copay](#)

Usage: Required for the following Cost Sharing Types, otherwise not used:

Benefit Deductible+Co-pay
Plan Deductible+Co-pay
Rx Deductible+Co-pay
Deductible C+Co-pay
Deductible D+Co-pay

Type: Integer

Values: Send the integer value without dollars signs, commas, etc., of the Copay amount for each benefit category. If not applicable, can send null or 0; it will be ignored.

**Cost Sharing - Co-Insurance**

Parameters: [IHC\\_Coins](#), [OFS\\_Coins](#), [ED\\_Coins](#), [A\\_Coins](#), [PSPC\\_Coins](#), [PSED\\_Coins](#), [PSS\\_Coins](#), [PSOC\\_Coins](#), [PSPD\\_Coins](#), [PSPT\\_Coins](#), [DSR\\_Coins](#), [DSL\\_Coins](#), [PDG\\_Coins](#), [PDB\\_Coins](#), [OTCD\\_Coins](#), [PSV\\_Coins](#), [DME\\_Coins](#), [MS\\_Coins](#), [OTCM\\_Coins](#), [OIS\\_Coins](#)

Usage: Required for the following Cost Sharing Types, otherwise not used:

Benefit Deductible+Coins
Plan Deductible+Coins
Rx Deductible+Coins
Deductible C+Coins
Deductible D+Coins

Type: Double/Decimal

Values: Send the decimal value without dollars signs, commas, etc., of the Coinsurance rate for each benefit category. If not applicable, can send null or 0; it will be ignored. **For example, a 10% coinsurance rate would be entered as .10.**

### **Coverage Limits - Per Month**

Parameters: IHC\_CLMonth, OFS\_CLMonth, ED\_CLMonth, A\_CLMonth, PSPC\_CLMonth, PSED\_CLMonth, PSS\_CLMonth, PSOC\_CLMonth, PSPD\_CLMonth, PSPT\_CLMonth, DSR\_CLMonth, DSL\_CLMonth, PDG\_CLMonth, PDB\_CLMonth, OTCD\_CLMonth, PSV\_CLMonth, DME\_CLMonth, MS\_CLMonth, OTCM\_CLMonth, OIS\_CLMonth

Usage: Optional. Use 0 or null to indicate there are no monthly visit limits.

Type: integer

Values: Send the integer value indicating the number of visits covered each month for each benefit category.

### **Coverage Limits - Per Year**

Parameters: IHC\_CLYear, OFS\_CLYear, ED\_CLYear, A\_CLYear, PSPC\_CLYear, PSED\_CLYear, PSS\_CLYear, PSOC\_CLYear, PSPD\_CLYear, PSPT\_CLYear, DSR\_CLYear, DSL\_CLYear, PDG\_CLYear, PDB\_CLYear, OTCD\_CLYear, PSV\_CLYear, DME\_CLYear, MS\_CLYear, OTCM\_CLYear, OIS\_CLYear

Usage: Optional. Use 0 or null to indicate there are no annual visit limits.

Type: integer

Values: Send the integer value indicating the number of visits covered each year for each benefit category.

### **OOP Limit Applies?**

Parameters: IHC\_OOP, OFS\_OOP, ED\_OOP, A\_OOP, PSPC\_OOP, PSED\_OOP, PSS\_OOP, PSOC\_OOP, PSPD\_OOP, PSPT\_OOP, DSR\_OOP, DSL\_OOP, PDG\_OOP, PDB\_OOP, OTCD\_OOP, PSV\_OOP, DME\_OOP, MS\_OOP, OTCM\_OOP, OIS\_OOP

Usage: Required.

Type: Boolean

Values: Send true or false to indicate whether the Individual out-of-pocket limit applies for each benefit category.

### Plan Deductible

Parameter: [PlanDed](#)

Usage: Required if any of the following Cost Sharing types are used:

Plan Deductible Only
Plan Deductible+Co-pay
Plan Deductible+Co-ins

Type: integer

Values: Enter the integer value without dollars signs, commas, etc., of the Plan Deductible amount for the plan. If not applicable, can send null or 0; it will be ignored.

### Rx Deductible

Parameter: [RxDed](#)

Usage: Required if any of the following Cost Sharing types are used:

Rx Deductible Only
Rx Deductible+Co-pay
Rx Deductible+Co-ins

Type: integer

Values: Enter the integer value without dollars signs, commas, etc., of the Rx Deductible amount for the plan. If not applicable, can send null or 0; it will be ignored.

### Deductible C

Parameter: CDed

Usage: Required if any of the following Cost Sharing types are used:

Deductible C Only
Deductible C+Co-pay
Deductible C+Co-ins

Type: integer

Values: Enter the integer value without dollars signs, commas, etc., of the Deductible C amount for the plan. If not applicable, can send null or 0; it will be ignored.

### **Deductible D**

Parameter: DDed

Usage: Required if any of the following Cost Sharing types are used:

Deductible D Only
Deductible D+Co-pay
Deductible D+Co-ins

Type: integer

Values: Enter the integer value without dollars signs, commas, etc., of the Deductible D amount for the plan. If not applicable, can send null or 0; it will be ignored.

### **Individual Out-of-Pocket (OOP) Limit**

Parameter: OOP

Usage: Required if any of the Benefit Categories are applying an out-of-pocket limit.

Type: boolean

Values: Enter the integer value without dollars signs, commas, etc., of the Individual Out-of-Pocket limit for the plan. If not applicable, can send null or 0; it will be ignored.



**Properties**

Maternity Example		Diabetes Type 2 Example	
Plan Pays:	[Mat_PlanPays]	Plan Pays:	[Diab_PlanPays]
Patient Pays:	[Mat_PatPays]	Patient Pays:	[Diab_PatPays]
Deductibles	[Mat_Ded]	Deductibles	[Diab_Ded]
Copayments	[Mat_Copay]	Copayments	[Diab_Copay]
Coinsurance	[Mat_Coins]	Coinsurance	[Diab_Coins]
Exclusions & Limits	[Mat_Exclude]	Exclusions & Limits	[Diab_Exclude]
Detail	Timeline	Line Item	
Foot Fracture Example			
Plan Pays:	[FF_PlanPays]		
Patient Pays:	[FF_PatPays]		
Deductibles	[FF_Ded]		
Copayments	[FF_Copay]		
Coinsurance	[FF_Coins]		
Exclusions & Limits	[FF_Exclude]		
Detail	Timeline	Line Item	

- Mat\_PlanPays (integer): **Plan Pays** value for Maternity Example
- Mat\_PatPays (integer): **Patient Pays** value for Maternity Example
- Mat\_Ded (Integer): **Deductibles** value for Maternity example
- Mat\_Copay (integer): **Copayments** value for Maternity example
- Mat\_Coins (integer): **Coinsurance** value for Maternity example
- Mat\_Exclude (integer): **Exclusions & Limits** value for Maternity example

- Diab\_PlanPays (integer): **Plan Pays** value for Diabetes Type 2 Example

Diab\_PatPays (integer): **Patient Pays** value for Diabetes Type 2 Example

Diab\_Ded (Integer): **Deductibles** value for Diabetes Type 2 Example

Diab\_Copay (integer): **Copayments** value for Diabetes Type 2 Example

Diab\_Coins (integer): **Coinsurance** value for Diabetes Type 2 Example

Diab\_Exclude (integer): **Exclusions & Limits** value for Diabetes Type 2 Example

FF\_PlanPays (integer): **Plan Pays** value for Foot Fracture Example

FF\_PatPays (integer): **Patient Pays** value for Foot Fracture Example

FF\_Ded (Integer): **Deductibles** value for Foot Fracture example

FF\_Copay (integer): **Copayments** value for Foot Fracture example

FF\_Coins (integer): **Coinsurance** value for Foot Fracture example

FF\_Exclude (integer): **Exclusions & Limits** value for Foot Fracture example

Version (string): Contains version for SBC\_CovgCalc DLL.

Error (string): If an error occurred preventing the calculation, this contains detailed information about the error.