



## Аналитические рекомендации: Создание идентификаторов инвалидности с использованием синтаксиса SAS Краткого опросника по функциональным способностям Вашингтонской группы (ВГ-КО)

### Введение

Наилучшее понимание инвалидности достигается ее представлением в качестве континуума. С точки зрения затруднений функционирования, понятие «затруднение» может быть реализовано с помощью целого ряда дескрипторов, от «Не испытываю затруднений», через «Испытываю определенные затруднения» и «Испытываю большие затруднения» и до полной неспособности выполнить действие. Каждый из этих дескрипторов представляет собой ограничение или пороговое значение для определения окончательного идентификатора инвалидности; например, для определения лиц с инвалидностью или без нее. Эти уровни функционирования представлены также в категориях ответов на Краткий опросник по функциональным способностям Вашингтонской группы (ВГ-КО).

Распространенность инвалидности не составляет самостоятельный раздел статистики, но ее можно рассчитать для различных пороговых значений в зависимости от целей сбора данных и отчетности. Например, если цель состоит в обеспечении справедливого доступа к общественным пространствам, то уровень включения для идентификатора инвалидности может представлять «*Испытываю определенные затруднения*», поскольку даже лица с незначительным уровнем затруднений функционирования, вероятно, получают пользу от адаптаций, сделанных для устранения барьеров и упрощения доступа. Например, установка эскалаторов вместо лестниц является обычным элементом универсального дизайна, полезного людям с широким диапазоном затруднений передвижения. В качестве альтернативы, если целью является предоставление субсидий или надбавок — уровень включения для

### Исполнительные документы Вашингтонской группы

охватывают инструменты, разработанные Вашингтонской группой по статистике инвалидности (ВГ) для сбора данных об инвалидности, сопоставимых на международном уровне, при проведении переписей и обследований. В этих документах рассматриваются лучшие практики по применению Краткого опросника, Расширенного опросника, Краткого опросника — усовершенствованной версии, Детских функциональных модулей ВГ/ЮНИСЕФ для возрастов 2–4 и 5–17 лет, а также модуля ВГ/МО-РСИ МОТ по инвалидности и других инструментов ВГ. Тематика включает проблемы перевода, определение вопросов, аналитические рекомендации, программный код для анализа, использование инструментов для выделения подгрупп и многое другое.

Другие исполнительные документы ВГ и более подробная информация находятся на сайте Вашингтонской группы:  
<http://www.washingtongroup-disability.com/>.

идентификатора инвалидности может быть «*Не могу это делать*», поскольку только лица с серьезными функциональными ограничениями будут соответствовать более строгим критериям отбора.

Синтаксис SAS, описанный в этом документе, предусматривает расчет четырех идентификаторов инвалидности при четырех пороговых значениях. Популяция людей с *ограниченными возможностями*, для которых применяются эти четыре различных порога, дает следующие четыре идентификатора инвалидности:

- **ИНВАЛИДНОСТЬ1:** уровень включения — по крайней мере, в одном домене/вопросе код ответа является ИСПЫТЫВАЮ ОПРЕДЕЛЕННЫЕ ЗАТРУДНЕНИЯ или ИСПЫТЫВАЮ БОЛЬШИЕ ЗАТРУДНЕНИЯ или НЕ МОГУ ЭТО ДЕЛАТЬ.
- **ИНВАЛИДНОСТЬ2:** уровень включения — не менее чем в 2 доменах/вопросах ответы ИСПЫТЫВАЮ ОПРЕДЕЛЕННЫЕ ЗАТРУДНЕНИЯ или в любом одном домене/вопросе ответ ИСПЫТЫВАЮ БОЛЬШИЕ ЗАТРУДНЕНИЯ или НЕ МОГУ ЭТО ДЕЛАТЬ.
- **ИНВАЛИДНОСТЬ3:** уровень включения — в любом одном домене/вопросе ответ ИСПЫТЫВАЮ БОЛЬШИЕ ЗАТРУДНЕНИЯ или НЕ МОГУ ЭТО ДЕЛАТЬ.

**ПРИМЕЧАНИЕ: ИНВАЛИДНОСТЬ3 — ПОРОГОВЫЙ УРОВЕНЬ, РЕКОМЕНДУЕМЫЙ ВГ.**

- **ИНВАЛИДНОСТЬ4:** уровень включения — в любом одном домене ответ НЕ МОГУ ЭТО ДЕЛАТЬ (4).

**ПРИМЕЧАНИЕ:** синтаксис SAS основан на *метках переменных и метках значений*, указанных в таблицах ниже. Убедитесь, что Вы используете те же *метки переменных и значений* ИЛИ измените синтаксис SAS, чтобы отражать *метки*, используемые в Вашей базе данных.

ВГ-КО является частью Национального анкетирования по вопросам здоровья (NHIS) США. Данные, использованные для подготовки этих рекомендаций, взяты из NHIS за 2013 год.

*Примечание для пользователей NHIS:* имена переменных в файле данных и документации NHIS могут отличаться от тех, что используются в этом документе; например, переменная домена самообслуживания, упоминаемая как SC-SS в этом документе, в файле данных и документации NHIS называется UB\_SS.

*Код SAS, используемый для получения выходных данных в этом документе, полностью включен в Приложение.*

Вопросы/домены Краткого опросника ВГ	Метка переменной
1. Испытываете ли Вы трудности со зрением даже при ношении очков?	VIS_SS
2. Испытываете ли Вы трудности со слухом даже при использовании слухового аппарата?	HEAR_SS
3. Испытываете ли Вы затруднения при ходьбе или поднимаясь по ступенькам?	MOB_SS
4. Испытываете ли Вы затруднения при запоминании или концентрации внимания?	COG_SS
5. Испытываете ли Вы затруднения (с самообслуживанием, например) с умыванием или одеванием?	SC_SS
6. Испытываете ли Вы затруднения при устном общении (например, чтобы понимать или быть понятым)?	COM_SS

Метки значений, используемые для каждого из вопросов ВГ-КО:

1. Не испытываю затруднений
2. Да, испытываю определенные затруднения
3. Да, испытываю большие затруднения
4. Не могу это делать
7. Отказываюсь отвечать
8. Не установлено
9. Не знаю

## **SAS WG Short Set Syntax Annotated with Output Tables**

Actual SAS syntax is indented and are in **Blue text**.

NOTE: For data analysis, use your standard weighting and estimation techniques.

The syntax below produces frequency distributions on each the six domains. Codes 7 (REFUSED), 8 (NOT ASCERTAINED) and 9 (DON'T KNOW) are RECODED as **MISSING**.

*Step 1: Generate frequency distributions on each of the six domain variables.*

VIS\_SS is the WG-SS Vision question.

```
If VIS_SS in (1, 2, 3, 4) then Vision=VIS_SS;
Else If VIS_SS in (7, 8, 9) then Vision=.;
```

```
Proc Freq Data=SS.Funcdisb13;
Tables Vision;
Run;
```

NOTE: *SS.Funcdisb13* is the name of the SAS file used for these analyses. When preparing your SAS code, replace this SAS file with the name of your SAS file.

### Vision: Degree of difficulty seeing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13690	79.0	81.6	81.6
	Some difficulty	2708	15.6	16.2	97.8
	<b>A lot of difficulty</b>	<b>333</b>	<b>1.9</b>	<b>2.0</b>	<b>99.8</b>
	<b>Cannot do at all</b>	<b>36</b>	<b>.2</b>	<b>.2</b>	<b>100.0</b>
	Total	16767	96.8	100.0	
Missing		559	3.2		
Total		17326	100.0		

HEAR\_SS is the WG-SS Hearing question.

**If** HEAR\_SS in (1, 2, 3, 4) **then** Hearing =HEAR\_SS;  
**Else If** HEAR\_SS in (7, 8, 9 ) **then** Hearing =.;

**Proc Freq Data**=SS.Funclisb13;  
**Tables** Hearing;  
**Run**;

### Hearing: Degree of difficulty hearing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13680	79.0	81.6	81.6
	Some difficulty	2753	15.9	16.4	98.0
	<b>A lot of difficulty</b>	<b>310</b>	<b>1.8</b>	<b>1.8</b>	<b>99.9</b>
	<b>Cannot do at all</b>	<b>23</b>	<b>.1</b>	<b>.1</b>	<b>100.0</b>
	Total	16766	96.8	100.0	
Missing		560	3.2		
Total		17326	100.0		

MOB\_SS is the WG-SS Mobility question.

**If** MOB\_SS in (1, 2, 3, 4) **then** Mobility=MOB\_SS;  
**Else If** MOB\_SS in (7, 8, 9 ) **then** Mobility=.;

**Proc Freq Data**=SS.Funclisb13;  
**Tables** Mobility;  
**Run**;

### Mobility: Degree of difficulty walking or climbing steps

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13424	77.5	80.1	80.1
	Some difficulty	2165	12.5	12.9	93.0
	<b>A lot of difficulty</b>	<b>792</b>	<b>4.6</b>	<b>4.7</b>	<b>97.7</b>
	<b>Cannot do at all</b>	<b>380</b>	<b>2.2</b>	<b>2.3</b>	<b>100.0</b>
	Total	16761	96.7	100.0	
Missing		565	3.3		
Total		17326	100.0		

COM\_SS is the WG-SS Communication question.

```
If COM_SS in (1, 2, 3,4) then Communication =COM_SS;  
Else If COM_SS in (7, 8, 9 ) then Communication =.;
```

```
Proc Freq Data=SS.Funcdisb13;  
Tables Communication;  
Run;
```

### Communication: Degree of difficulty communicating using usual language

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	15874	91.6	94.7	94.7
	Some difficulty	745	4.3	4.4	99.2
	<b>A lot of difficulty</b>	<b>94</b>	<b>.5</b>	<b>.6</b>	<b>99.7</b>
	<b>Cannot do at all</b>	<b>43</b>	<b>.2</b>	<b>.3</b>	<b>100.0</b>
	Total	16756	96.7	100.0	
Missing		570	3.3		
Total		17326	100.0		

SC\_SS is the WG-SS Self-care question.

```
If SC_SS in (1, 2, 3, 4) then Self_Care=SC_SS;  
Else If SC_SS in (7, 8, 9 ) then Self_Care=.;
```

```
Proc Freq Data=SS.Funcdisb13;  
Tables Self_Care;  
Run;
```

### Self\_Care Degree of difficulty with self-care

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	16029	92.5	95.7	95.7
	Some difficulty	544	3.1	3.2	98.9
	<b>A lot of difficulty</b>	<b>114</b>	<b>.7</b>	<b>.7</b>	<b>99.6</b>
	<b>Cannot do at all</b>	<b>68</b>	<b>.4</b>	<b>.4</b>	<b>100.0</b>
	Total	16755	96.7	100.0	
Missing		571	3.3		
Total		17326	100.0		

COG\_SS is the WG-SS Cognition question.

**If** COG\_SS in (1, 2, 3, 4) **then** Cognition=COG\_SS;  
**Else If** COG\_SS in (7, 8, 9 ) **then** Cognition=.;

**Proc Freq Data**=SS.Funcdisb13;  
**Tables** Cognition;  
**Run**;

### Cognition: Degree of difficulty remembering or concentrating

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13719	79.2	81.9	81.9
	Some difficulty	2632	15.2	15.7	97.6
	<b>A lot of difficulty</b>	<b>382</b>	<b>2.2</b>	<b>2.3</b>	<b>99.9</b>
	<b>Cannot do at all</b>	<b>20</b>	<b>.1</b>	<b>.1</b>	<b>100.0</b>
	Total	16753	96.7	100.0	
Missing		573	3.3		
Total		17326	100.0		

#### Step 2: Calculate a variable, SUM\_234

SUM\_234 summates the number of domains coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) for each person. This new variable is used in the determination of disability identifiers: **DISABILITY1** and **DISABILITY2**.

The syntax below **counts** the number of domains/questions a person has that are coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

Possible range 0: no difficulties in any domain, to 6: all six domains coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

If missing(Vision) and missing(Hearing) and missing(Mobility) and missing(Cognition) and missing(Self\_Care) and missing(Communication) **then** SumPoints=.;  
**Else If** (Vision =1) and (Hearing =1) and (Mobility =1) and (Cognition =1) and (Self\_Care =1) and (Communication =1) **then** SumPoints=0;  
**Else** SumPoints=SUM( (Vision in(2,3,4)),(Hearing in(2,3,4)),(Mobility in(2,3,4)),(Cognition in(2,3,4)),(Self\_Care in(2,3,4)),(Communication in(2,3,4)) );

**If** SumPoints =. **then** SUM\_234 =.;  
**Else If** SumPoints = 1 **then** SUM\_234=1;  
**Else If** SumPoints = 2 **then** SUM\_234=2;  
**Else If** SumPoints = 3 **then** SUM\_234=3;  
**Else If** SumPoints = 4 **then** SUM\_234=4;  
**Else If** SumPoints = 5 **then** SUM\_234=5;  
**Else If** SumPoints = 6 **then** SUM\_234=6;  
**Else If** SumPoints = 0 **then** SUM\_234=0;

**Proc Freq Data**=SS.Funcdisb13;  
**Tables** SUM\_234;  
**Run**;

		SUM_234			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	9266	53.5	55.2	55.2
	1.00	3839	22.2	22.9	78.1
	2.00	1892	10.9	11.3	89.4
	3.00	989	5.7	5.9	95.3
	4.00	481	2.8	2.9	98.2
	5.00	232	1.3	1.4	99.5
	6.00	78	.5	.5	100.0
	Total	16777	96.8	100.0	
Missing		549	3.2		
Total		17326	100.0		

*Step 3: Calculate a variable, SUM\_34*

SUM\_34 summates the number of domains coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) for each person. This new variable is used in the determination of disability identifier: **DISABILITY2**.

The syntax below counts the number of domains/questions a person has that are coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4)  
Possible range 0: no difficulties coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) in any domain, to 6: all six domains coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4). MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

**If** missing(Vision) and missing(Hearing) and missing(Mobility) and missing(Cognition) and missing(Self\_Care) and missing(Communication) **then** SumPoints2=.;  
**Else If** (Vision in(1,2)) and (Hearing in(1,2)) and (Mobility in(1,2)) and (Cognition in(1,2)) and (Self\_Care in(1,2)) and (Communication in(1,2)) **then** SumPoints2=0;  
**Else** SumPoints2=SUM( (Vision in(3,4)),(Hearing in(3,4)),(Mobility in(3,4)),(Cognition in(3,4)),(Self\_Care in(3,4)),(Communication in(3,4)) );

**If** SumPoints2 =. **then** SUM\_34 =.;  
**Else If** SumPoints2 = 1 **then** SUM\_34=1;  
**Else If** SumPoints2 = 2 **then** SUM\_34=2;  
**Else If** SumPoints2 = 3 **then** SUM\_34=3;  
**Else If** SumPoints2 = 4 **then** SUM\_34=4;  
**Else If** SumPoints2 = 5 **then** SUM\_34=5;  
**Else If** SumPoints2 = 6 **then** SUM\_34=6;  
**Else If** SumPoints2 = 0 **then** SUM\_34=0;

**Proc Freq Data**=SS.Funcdisb13;  
**Tables** SUM\_34;  
**Run**;

		SUM_34			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	14905	86.0	88.8	88.8
	1.00	1367	7.9	8.1	97.0
	2.00	345	2.0	2.1	99.0
	3.00	117	.7	.7	99.7
	4.00	31	.2	.2	99.9
	5.00	9	.1	.1	100.0
	6.00	3	.0	.0	100.0
	Total	16777	96.8	100.0	
Missing		549	3.2		
Total		17326	100.0		

**Step 4: Calculate Disability Identifier: *DISABILITY1***

The syntax below calculates the first disability identifier: **DISABILITY1** where the level of inclusion is at least one domain/question is coded SOME DIFFICULTY or A LOT OF DIFFICULTY or CANNOT DO AT ALL.

MISSING (.) are those who have coded 7, 8 or 9 on all six domains.

**If** missing(Vision) and missing(Hearing) and missing(Mobility) and missing(Cognition) and missing(Self\_Care) and missing(Communication) **then** Disability1=.;  
**Else If** SUM\_234 >=1 **then** Disability1=1;  
**Else** Disability1=2;

NOTE: SUM 234 >= 1 means that at least one of the six domains is coded at least SOME



DIFFICULTY (2).

```
Proc Freq Data=SS.Funcdisb13;
Tables Disability1;
Run;
```

### DISABILITY1

		Frequency	Percent	Valid Percent	Cumulative Percent	Weighted Percent*
Valid	without disability	9266	53.5	55.2	55.2	58.1
	with disability	7511	43.4	44.8	100.0	41.9
	Total	16777	96.8	100.0		100.0
Missing		549	3.2			
Total		17326	100.0			

\*Weighted estimate provided – but is not part of the SAS syntax.

### Step 5: Calculate Disability Identifier: **DISABILITY2**

The syntax below calculates the second disability identifier: **DISABILITY2** where the level of inclusion is: at least 2 domains/questions are coded SOME DIFFICULTY or any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL.

MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

```
If missing(Vision) and missing(Hearing) and missing(Mobility) and missing(Cognition) and
missing(Self_Care) and missing(Communication) then Disability2=.;
Else If (SUM_234 >=2 OR SUM_34=1) then Disability2=1;
Else Disability2=2;
```

NOTE: The above syntax identifies those with at least two of the six domains coded as at least SOME DIFFICULTY (2): SUM\_234 >= 2, OR those who have one domain that is coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4): SUM\_34 = 1.

```
Proc Freq Data=SS.Funcdisb13;
Tables Disability2;
Run;
```

### DISABILITY2

		Frequency	Percent	Valid Percent	Cumulative Percent	Weighted Percent*
Valid	without disability	12707	73.3	75.7	75.7	78.3
	with disability	4070	23.5	24.3	100.0	21.7
	Total	16777	96.8	100.0		100.0
Missing		549	3.2			
Total		17326	100.0			

\*Weighted estimate provided – but is not part of the SAS syntax.

Для получения дополнительной информации о Вашингтонской группе по статистике инвалидности перейдите на сайт:

<http://www.washingtongroup-disability.com/>.

Step 6: Calculate Disability Identifier: **DISABILITY3**

The syntax below calculates the third disability identifier: **DISABILITY3** where the level of inclusion is: any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL. MISSING (9) are those who have coded 7, 8 or 9 on all six domains.  
**THIS IS THE CUT-OFF RECOMMENDED BY THE WG.**

**If** missing(Vision) and missing(Hearing) and missing(Mobility) and missing(Cognition) and missing(Self\_Care) and missing(Communication) **then** Disability3=.;  
**Else If** ((Vision = 3 OR Vision = 4) OR (Hearing= 3 OR Hearing = 4) OR (Mobility= 3 OR Mobility = 4) OR (Communication= 3 OR Communication = 4) OR (Self\_Care = 3 OR Self\_Care = 4) OR (Cognition = 3 OR Cognition = 4)) **then** Disability3=1;  
**Else** Disability3 = 2;

**Proc Freq Data**=SS.Funcdisb13;  
**Tables** Disability3;  
**Run;**

		DISABILITY3		Valid	Cumulative	Weighted
		Frequency	Percent	Percent	Percent	Percent*
Valid	without disability	14905	86.0	88.8	88.8	90.5
	with disability	1872	10.8	11.2	100.0	9.5
	Total	16777	96.8	100.0		100.0
Missing		549	3.2			
Total		17326	100.0			

\*Weighted estimate provided – but is not part of the SAS syntax.

Step 7: Calculate Disability Identifier: **DISABILITY4**

The syntax below calculates the fourth disability identifier: **DISABILITY4** where the level of inclusion is any one domain is coded CANNOT DO AT ALL (4). MISSING (.) are those who have coded 7, 8 or 9 on all six domains.

**If** missing(Vision) and missing(Hearing) and missing(Mobility) and missing(Cognition) and missing(Self\_Care) and missing(Communication) **then** Disability4=.;  
**Else If** ((Vision = 4) OR (Hearing = 4) OR (Mobility = 4) OR (Communication = 4) OR (Self\_Care = 4) OR (Cognition = 4)) **then** Disability4=1;  
**Else** Disability4 = 2;

**Proc Freq Data**=SS.Funcdisb13;  
**Tables** Disability4;  
**Run;**

**DISABILITY4**

		Frequency	Percent	Valid Percent	Cumulative Percent	Weighted Percent*
Valid	without disability	16312	94.1	97.2	97.2	97.8
	with disability	465	2.7	2.8	100.0	2.2
	Total	16777	96.8	100.0		100.0
Missing		549	3.2			
Total		17326	100.0			

\*Weighted estimate provided – but is not part of the SAS syntax.

## APPENDIX

### SAS Code Used with the 2013 NHIS Data File

```
Data SS.Funcdisb13;
    Set NHIS.Funcdisb13 ;

*The syntax below produces frequency distributions on each the six domains. Codes 7
(REFUSED), 8 (NOT ASCERTAINED) and 9 (DON'T KNOW) are INCLUDED as MISSING.;

*Vision;
*Generate frequency distribution for each domain question. Convert 7,8,9 to
missing;
    If VIS_SS2 in (1,2,3,4) then Vision=VIS_SS2;
    Else Vision=.;

*Communication;
*Generate frequency distribution for each domain question. Convert 7,8,9 to
missing;
    If COM_SS in (1,2,3,4) then Communication=COM_SS;
    Else Communication=.;

*Hearing;
*Generate frequency distribution for each domain question. Recode 7,8,9 to .;
    If HEAR_SS2 in (1,2,3,4) then Hearing=HEAR_SS2;
    Else If HEAR_SS2 in (7,8,9 ) then Hearing=.;

*Cognition: Degree of difficulty remembering or concentrating;
*Generate frequency distribution for each domain question. Recode 7,8,9 to .;
    If COG_SS in (1,2,3,4) then Cognition=COG_SS;
    Else If COG_SS in (7,8,9) then Cognition=.;

*Self care;
    If UB_SS in (1,2,3,4) then Self_Care=UB_SS;
    Else Self_Care=.;

*Mobility;
    If MOB_SS2 in (1,2,3,4) then Mobility=MOB_SS2;
    Else Mobility=.;

*Step 1: Generate frequency distributions on each of the six domain variables.;

*Step 2: Calculate a variable, SUM_234. SUM_234 summates the number of domains
coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4)for
each person. This new variable is used in the determination of disability
identifiers: DISABILITY1 and DISABILITY2.
The syntax below counts the number of domains/questions a person has that are coded
SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).
Possible range 0: no difficulties in any domain, to 6: all six domains coded SOME
DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).
MISSING (9) are those who have coded 7, 8 or 9 on all six domains.;

    If missing(Vision) and missing(Hearing) and missing(Mobility) and
missing(Cognition) and missing(Self_Care) and missing(Communication) then
SumPoints=.;
    Else If (Vision =1) and (Hearing =1) and (Mobility =1) and (Cognition =1) and
(Self_Care =1) and (Communication =1) then SumPoints=0;
    Else SumPoints=SUM( (Vision in(2,3,4)), (Hearing in(2,3,4)), (Mobility
```

```
in(2,3,4)), (Cognition in(2,3,4)), (Self_Care in(2,3,4)), (Communication  
in(2,3,4)) );
```

```
    If SumPoints = .    then SUM_234 =.;  
Else If SumPoints = 1 then SUM_234=1;  
Else If SumPoints = 2 then SUM_234=2;  
Else If SumPoints = 3 then SUM_234=3;  
Else If SumPoints = 4 then SUM_234=4;  
Else If SumPoints = 5 then SUM_234=5;  
Else If SumPoints = 6 then SUM_234=6;  
Else If SumPoints = 0 then SUM_234=0;
```

**\*Step 3:** Calculate a variable, SUM\_34. SUM\_34 summates the number of domains coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) for each person.

This new variable is used in the determination of disability identifier: DISABILITY2.

The syntax below counts the number of domains/questions a person has that are coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4)

Possible range 0: no difficulties coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) in any domain, to 6: all six domains coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4). MISSING (9) are those who have coded 7, 8 or 9 on all six domains.;

```
    If missing(Vision) and missing(Hearing) and missing(Mobility) and  
missing(Cognition) and missing(Self_Care) and missing(Communication) then  
SumPoints2=.;  
Else If (Vision in(1,2)) and (Hearing in(1,2)) and (Mobility in(1,2)) and  
(Cognition in(1,2)) and (Self_Care in(1,2)) and (Communication in(1,2))  
then SumPoints2=0;  
Else SumPoints2=SUM( (Vision in(3,4)), (Hearing in(3,4)), (Mobility  
in(3,4)), (Cognition in(3,4)), (Self_Care in(3,4)), (Communication in(3,4)) );
```

```
    If SumPoints2 = .    then SUM_34 =.;  
Else If SumPoints2 = 1 then SUM_34=1;  
Else If SumPoints2 = 2 then SUM_34=2;  
Else If SumPoints2 = 3 then SUM_34=3;  
Else If SumPoints2 = 4 then SUM_34=4;  
Else If SumPoints2 = 5 then SUM_34=5;  
Else If SumPoints2 = 6 then SUM_34=6;  
Else If SumPoints2 = 0 then SUM_34=0;
```

**\*Step 4:** Calculate Disability Identifier: DISABILITY1. The syntax below calculates the first disability identifier: DISABILITY1 where the level of inclusion is at least one domain/question is coded SOME DIFFICULTY or A LOT OF DIFFICULTY or CANNOT DO AT ALL. MISSING (9) are those who have coded 7, 8 or 9 on all six domains;

```
    If missing(Vision) and missing(Hearing) and missing(Mobility) and  
missing(Cognition) and missing(Self_Care) and missing(Communication) then  
Disability1=.;  
Else If SUM_234 >=1 then Disability1=1;  
Else Disability1=2;
```

**\*Step 5:** Calculate Disability Identifier: DISABILITY2. The syntax below calculates the second disability identifier: DISABILITY2 where the level of inclusion is: at least 2 domains/questions are coded SOME DIFFICULTY or any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL.

MISSING (9) are those who have coded 7, 8 or 9 on all six domains;

```
    If missing(Vision) and missing(Hearing) and missing(Mobility) and  
missing(Cognition) and missing(Self_Care) and missing(Communication) then
```

```
Disability2=.;  
Else If (SUM_234 >=2 OR SUM_34=1 ) then Disability2=1;  
Else Disability2=2;
```

**\*Step 6:** Calculate Disability Identifier: DISABILITY3. The syntax below calculates the third disability identifier: DISABILITY3 where the level of inclusion is: any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL. MISSING (9) are those who have coded 7, 8 or 9 on all six domains.  
THIS IS THE CUT-OFF RECOMMENDED BY THE WG.;

```
If missing(Vision) and missing(Hearing) and missing(Mobility) and  
missing(Cognition) and missing(Self_Care) and missing(Communication) then  
Disability3=.;  
Else IF ((vision = 3 OR vision = 4) OR (Hearing= 3 OR Hearing = 4) OR  
(mobility= 3 OR mobility = 4) OR (Communication= 3 OR Communication = 4) OR  
(Self_Care = 3 OR Self_Care = 4) OR (Cognition = 3 OR Cognition = 4)) then  
Disability3=1;  
Else Disability3 = 2;
```

**\*Step 7:** Calculate Disability Identifier: DISABILITY4. The syntax below calculates the fourth disability identifier: DISABILITY4 where the level of inclusion is any one domain is coded CANNOT DO AT ALL (4). MISSING (9) are those who have coded 7, 8 or 9 on all six domains;

```
If missing(Vision) and missing(Hearing) and missing(Mobility) and  
missing(Cognition) and missing(Self_Care) and missing(Communication) then  
Disability4=.;  
Else IF ((vision = 4) OR (Hearing = 4) OR (mobility = 4) OR (Communication =  
4) OR (Self_Care = 4) OR (Cognition = 4)) then Disability4=1;  
Else Disability4 = 2;
```

Label

```
Vision="Degree of difficulty seeing"  
Communication="Degree of difficulty communicating using usual language"  
Hearing="Degree of difficulty hearing"  
Cognition="Degree of difficulty remembering or concentrating"  
Self_Care="Degree of difficulty with self-care"  
Mobility="Degree of difficulty walking or climbing steps";
```

```

Format Vision Communication Hearing HEAR_3_R HEAR_4_R Cognition Self_Care
UB_1_R UB_2_R Mobility MOB_4_R MOB_5_R Diff.
Disability1 Disability2 Disability3 Disability4 DisabF.;
Run;
Title "NHIS 2013: Unweighted frequencies with missing included in the percent";
Proc freq data=SS.Funcdisb13;
Tables Vision Hearing Mobility Communication Self_Care Cognition SUM_234
SUM_34 Disability1 Disability2 Disability3 Disability4/missing;
Run;
Title;
Title "NHIS 2013: Unweighted frequencies";
Proc freq data=SS.Funcdisb13;
Tables Vision Hearing Mobility Communication Self_Care Cognition SUM_234
SUM_34 Disability1 Disability2 Disability3 Disability4;
Run;
Title;
Proc format library=SS.SS;
Value Diff
1="No Difficulty"
2="Some Difficulty"
3="A lot of Difficulty"
4="Cannot do at all"
.="Missing"
;
Value DisabF
1="With Disability"
2="Without Disability"
;
Run;

```