WG Analysis & Dissemination Workgroup

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Key Agreements from WG-19

Data Analysis Workgroup

- Continue to develop a disability severity indicator
- Continue to develop standard templates for disseminating data collected using the WG questions

WG Short Set (WG-SS)

1) Do you have difficulty **seeing** even if wearing glasses?
2) Do you have difficulty **hearing** even if using a hearing aid?
3) Do you have difficulty **walking** or **climbing** stairs?
4) Do you have difficulty **remembering** or **concentrating**?
5) Do you have difficulty with (**self-care** such as) washing all over or dressing?
6) Using your usual language, do you have difficulty **communicating** (for example understanding or being understood by others)?

Response categories:

No difficulty; Some difficulty; A lot of difficulty; Cannot do at all

Disability Indicators using the WG-SS

- **SS-Disability Indicator** (**SS-DI1-4**) – where **SS-DI3** is the WG recommended status indicator based on the WG-SS that creates a disability dichotomy. ✓
- **SS-Highest Difficulty (SS-HD)**: describing 'severity' based on the highest level of difficulty recorded over the 6 domains.
- **SS-Severity Continuum (SS-SCo)**: the quantitative measure based on individual domain scores that describes a continuum of functioning.
- **SS-Severity Category (SS-SC)**: a categorical measure of 'severity' based on cut points along the above continuum.

Disability *Status* Indicators

The WG-SS allows for the determination of multiple disability status indicators based on:

- how information is collated across all 6 domains and
- the choice of the threshold or cut-off.

Any disability status indicator can be used for the disaggregation of outcome indicators (like access to education or employment).

Examples of Disability Status Indicators

Four Status Indicators that vary by inclusion criteria:

SS-DI1: Dichotomy; disability is defines as at least one domain is coded *some difficulty* or *a lot of difficulty* or *cannot do at all*.

SS-DI2: Dichotomy; disability is defines as at least 2 domains are coded *some difficulty* or any 1 domain is coded *a lot of difficulty* or *cannot do at all.*

SS-DI3: Dichotomy; disability is defines as any 1 domain is coded *a lot of difficulty* or *cannot do at all*.

This is the definition recommended by the WG.

SS-DI4: Dichotomy; disability is defines as any one domain is coded *cannot do at all*.

A Dichotomy creates Equivalence within Groups

The *recommended* Disability Status Indicator is a dichotomy [with/without disability], whereby

- ALL those who responded *a lot of difficulty* or *cannot do at all* to any one or more domain are coded as **with disability**; and
- ALL those whose responded only *some difficulty* or *no difficulty* to all 6 domains are coded as **without disability**.

Disability Status Indicator using the Recommended Cut Point

Disability Status Indicator		
	Frequency	**Percent**
Without disability	14905	**88.8**
With disability	1872	**11.2**
Total	16777	100.0

SS-Highest Difficulty (SS-HD)

Based on Highest Level of Difficulty in Any Domain

Going beyond a Dichotomy to Describe Measures of Severity

SS-Highest Difficulty (SS-HD) has 4 categories:

1. those who responded *cannot do at all* to any domain are coded as **more severe**;
2. those whose highest level of difficulty was *a lot of difficulty* on at least one domain are coded as **moderate**;
3. those whose highest level of difficulty was *some difficulty* on at least one domain are coded as **milder**; and
4. those who responded *no difficulty* to ALL 6 domains are coded as **none**.

SS-HD: Based on Highest Level of Difficulty in Any Domain

	SS-DI3				
SS-HD	Without disability	With disability	Total	**Percent**	
None	9266	0	9266	**55.2**	**88.8**
Milder	5639	0	5639	**33.6**	
Moderate	0	1407	1407	**8.4**	**11.2**
More Severe	0	465	465	**2.8**	
Total	14905	1872	16777	100.0	

Continued Problems of Equivalence

SS-HD differentiates *without disability* into **none** and **milder**; and *with disability* into **moderate** and **more severe**.

It does not, however, capture the fullness of the continuum – and problems of equivalence remain:

- someone with only one domain coded *some difficulty* has the same severity grade as someone with 6 domains coded *some difficulty*.
- someone with only one domain coded *a lot of difficulty* has the same severity grade as someone with 6 domains coded as *a lot of difficulty;* or 3 *a lot* and 3 *some;* or 4 *a lot* and 2 *no difficulty…*

The Challenge…

…how to:

- construct a Severity Continuum, based on a limited number of discrete response categories (*no difficulty, some difficulty, a lot of difficulty,* and *cannot do at all*) registered in the six questions and then,
- based on that continuum, determine cut-points for a severity indicator to create categories that would be as homogenous as possible regarding the risk associated with functional limitation.

Creating a Severity Continuum: SS-SCo

Based on assigning a numerical score to each response category:

No difficulty	= 0
Some difficulty	= 1
A lot of difficulty	= 6
Cannot do at all	= 36

Scoring for SS-SCo

Someone who has 6 responses of *no difficulty* is assigned a score of 6*0=0.

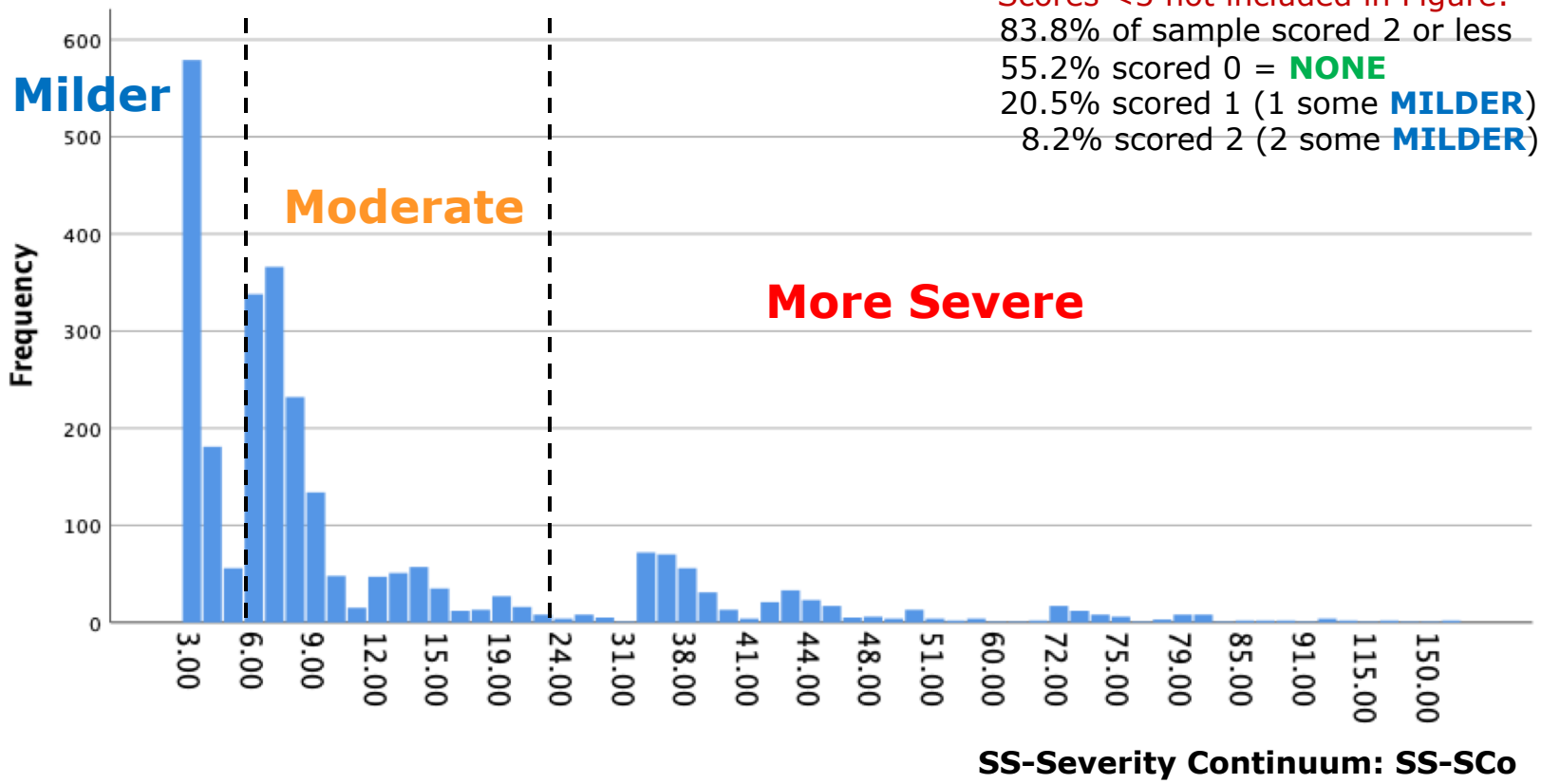
Someone who has 6 responses of *cannot do at all* is assigned a score of 6*36=216.

Examples of Individual Disability Severity Scores

No difficulty = 0 Some = 1 A lot = 6 Cannot do = 36

Example	Seeing	Hearing	Mobility	Cognition	Communication	Self care	Severity Score
1	**0**	**0**	**0**	**0**	**0**	**0**	**0**
2	**36**	**36**	**36**	**36**	**36**	**36**	**216**
3	**36**	**36**	**6**	**6**	**36**	**1**	**121**
4	**0**	**0**	**0**	**1**	**1**	**1**	**3**
5	**0**	**0**	**36**	**0**	**0**	**0**	**36**
6	**1**	**1**	**6**	**1**	**1**	**1**	**11**
7	**36**	**36**	**0**	**0**	**0**	**0**	**72**

Distribution of Scores for SS-SCo (score >=3)*



Severity Indicator Categories (SS-SC) Based on Severity Continuum (SS-Sco)

SS-SC: Severity Categories

	Frequency	**Percent**
None (Score = 0)	9266	**55.2**
Milder (Score = 1 to 4)	5572	**33.2**
Moderate (Score = 5 to 23)	1455	**8.7**
More Severe (Score = 24+)	484	**2.9**
Total	16777	100.0

Comparison of Severity Indicators

SS-SC by SS-HD

	SS-HD				
SS-SC	**None**	**Milder**	**Moderate**	**More Severe**	Total
None	9266	0	0	0	9266
Milder	0	5572	0	0	5572
Moderate	0	**67**	1388	0	1455
More Severe	0	0	**19**	465	484
Total	9266	5639	1407	465	16777

SS-SC by SS-DI3

	SS-DI3			
SS-SC	Without disability	With disability	Total	**Percent**
None	9266	0	9266	**55.2**
Milder	5572	0	5572	**33.2**
Moderate	**67**	1388	1455	**8.7**
More Severe	0	484	484	**2.9**
Total	14905	1872	16777	100.0

Disaggregation Using Different Disability Indicators

SS-DI3/SS-SC by Outcome Indicators

	% Working	Current smoker	Covered by health insurance
Without	73.6	13.3	82.7
With	30.8	19.6	88.5
None	76.8	12.0	81.7
Milder	67.1	15.6	84.3
Moderate	35.0	20.7	87.2
More Severe	13.7	14.9	93.4

Creating *Other* Disability Indicators Using the WG-SS

Indicators that answer specific questions or address specific issues…

Creating Domain-specific Measures of Difficulty

- What percent of the population had *no difficulty* per domain of functioning? [Column 1 *in table next slide*: No difficulty]
- What percent of the population had only *some difficulty* in a given domain of functioning? [Column 2: Some difficulty]
- What percent of the population had at least *some difficulty* in a given domain of functioning? [Sum of Columns 2,3 and 4]

Creating Domain-specific Measures of Difficulty

Core Domain	No difficulty	Some difficulty	A lot of difficulty	Cannot do at all
Seeing	81.6	16.2	2.0	0.2
Hearing	81.6	16.4	1.8	0.1
Mobility	80.1	12.9	4.7	2.3
Cognition	81.9	15.7	2.3	0.1
Self-Care	95.7	3.2	0.7	0.4
Communicating	94.7	4.4	0.6	0.3

Creating Indicators that Summarize Levels of Difficulty Across Domains

- What percent of the population had *some difficulty* on only one or two or more domains of functioning?
- What percent of the population had *a lot of difficulty* on more than 1 domain of functioning?
- What percent of the population had multiple domains that were answered *cannot do at all*? [*See table next slide*]

Creating Indicators that Summarize Levels of Difficulty Across Domains

Number of domains: *Cannot do at all*	Frequency	Percent
0	16312	97.2
1	381	2.3
2	71	.4
3	7	.0
4	4	.0
5	2	.0
Total	16777	100.0

Creating Indicators that Summarize Levels of Difficulty Across Domains

It is also possible to combine levels of functioning to determine functioning difficulty over multiple domains at more than one level of functioning to answer the question:

- What percent of the population had at least *some difficulty* on one or more domains of functioning? [*See table next slide*]

Creating Indicators that Summarize Levels of Difficulty Across Domains

Number of Domains with at least *some difficulty*	Frequency	Percent
0	9266	55.2
1	3839	22.9
2	1892	11.3
3	989	5.9
4	481	2.9
5	232	1.4
6	78	.5
Total	16777	100.0

Questions and Discussion

Additional examples look at combinations of domains to address specific issues, for example the cases of deafblindess and cognitive-communication disorders are included in the document.