

an episode’s clinical score. The points for the functional variables are added together to determine an episode’s functional score.

**TABLE 3: Case-Mix Adjustment Variables and Scores**

<b>Case-Mix Adjustment Variables and Scores</b>					
	Episode number within sequence of adjacent episodes	1 or 2	1 or 2	3+	3+
	Therapy visits	0-13	14+	0-13	14+
	EQUATION:	1	2	3	4
<b>CLINICAL DIMENSION</b>					
1	Primary or Other Diagnosis = Blindness/Low Vision	.	.	.	.
2	Primary or Other Diagnosis = Blood disorders	.	2	.	.
3	Primary or Other Diagnosis = Cancer, selected benign neoplasms	.	5	.	5
4	Primary Diagnosis = Diabetes	.	4	.	2
5	Other Diagnosis = Diabetes	1	.	.	.
6	Primary or Other Diagnosis = Dysphagia <b>AND</b> Primary or Other Diagnosis = Neuro 3 – Stroke	2	18	2	12
7	Primary or Other Diagnosis = Dysphagia <b>AND</b> M1030 (Therapy at home) = 3 (Enteral)	2	6	.	6
8	Primary or Other Diagnosis = Gastrointestinal disorders	.	.	.	.
9	Primary or Other Diagnosis = Gastrointestinal disorders <b>AND</b> M1630 (ostomy)= 1 or 2	.	7	.	.
10	Primary or Other Diagnosis = Gastrointestinal disorders <b>AND</b> Primary or Other Diagnosis = Neuro 1 - Brain disorders and paralysis, OR Neuro 2 - Peripheral neurological disorders, OR Neuro 3 - Stroke, OR Neuro 4 - Multiple Sclerosis	.	.	.	.
11	Primary or Other Diagnosis = Heart Disease OR Hypertension	1	2	.	2
12	Primary Diagnosis = Neuro 1 - Brain disorders and paralysis	2	12	7	12
13	Primary or Other Diagnosis = Neuro 1 - Brain disorders and paralysis <b>AND</b> M1840 (Toilet transfer) = 2 or more	.	3	.	3
14	Primary or Other Diagnosis = Neuro 1 - Brain disorders and paralysis <b>OR</b> Neuro 2 - Peripheral neurological disorders <b>AND</b> M1810 or M1820 (Dressing upper or lower body)= 1, 2, or 3	2	3	1	3
15	Primary or Other Diagnosis = Neuro 3 - Stroke	3	12	2	5
16	Primary or Other Diagnosis = Neuro 3 - Stroke <b>AND</b> M1810 or M1820 (Dressing upper or lower body)= 1, 2, or 3	.	.	.	.
17	Primary or Other Diagnosis = Neuro 3 - Stroke <b>AND</b> M1860 (Ambulation) = 4 or more	.	.	.	.
18	Primary or Other Diagnosis = Neuro 4 - Multiple Sclerosis <b>AND AT LEAST ONE OF THE FOLLOWING:</b> M1830 (Bathing) = 2 or more <b>OR</b> M1840 (Toilet transfer) = 2 or more <b>OR</b>	3	7	6	11

<b>Case-Mix Adjustment Variables and Scores</b>					
	M1850 (Transferring) = 2 or more <b>OR</b> M1860 (Ambulation) = 4 or more				
19	Primary or Other Diagnosis = Ortho 1 - Leg Disorders or Gait Disorders <b>AND</b> M1324 (most problematic pressure ulcer stage)= 1, 2, 3 or 4	8	1	7	.
20	Primary or Other Diagnosis = Ortho 1 - Leg OR Ortho 2 - Other orthopedic disorders <b>AND</b> M1030 (Therapy at home) = 1 (IV/Infusion) or 2 (Parenteral)	3	.	3	4
21	Primary or Other Diagnosis = Psych 1 – Affective and other psychoses, depression	.	.	.	.
22	Primary or Other Diagnosis = Psych 2 - Degenerative and other organic psychiatric disorders	.	.	.	.
23	Primary or Other Diagnosis = Pulmonary disorders	.	.	.	1
24	Primary or Other Diagnosis = Pulmonary disorders <b>AND</b> M1860 (Ambulation) = 1 or more	.	1	.	.
25	Primary Diagnosis = Skin 1 -Traumatic wounds, burns, and post-operative complications	4	20	7	18
26	Other Diagnosis = Skin 1 - Traumatic wounds, burns, post-operative complications	7	15	8	15
27	Primary or Other Diagnosis = Skin 1 -Traumatic wounds, burns, and post-operative complications <b>OR</b> Skin 2 – Ulcers and other skin conditions <b>AND</b> M1030 (Therapy at home) = 1 (IV/Infusion) or 2 (Parenteral)	3	.	.	.
28	Primary or Other Diagnosis = Skin 2 - Ulcers and other skin conditions	2	17	8	17
29	Primary or Other Diagnosis = Tracheostomy	4	17	4	17
30	Primary or Other Diagnosis = Urostomy/Cystostomy	.	18	.	13
31	M1030 (Therapy at home) = 1 (IV/Infusion) or 2 (Parenteral)	.	17	6	17
32	M1030 (Therapy at home) = 3 (Enteral)	.	16	.	9
33	M1200 (Vision) = 1 or more	.	.	.	.
34	M1242 (Pain)= 3 or 4	3	.	2	.
35	M1311 = Two or more pressure ulcers at stage 3 or 4 <sup>1</sup>	5	10	5	10
36	M1324 (Most problematic pressure ulcer stage)= 1 or 2	4	19	7	16
37	M1324 (Most problematic pressure ulcer stage)= 3 or 4	9	32	11	26
38	M1334 (Stasis ulcer status)= 2	4	15	8	15
39	M1334 (Stasis ulcer status)= 3	7	17	10	17
40	M1342 (Surgical wound status)= 2	2	7	5	11
41	M1342 (Surgical wound status)= 3	.	6	4	9
42	M1400 (Dyspnea) = 2, 3, or 4	.	.	.	.
43	M1620 (Bowel Incontinence) = 2 to 5	.	4	.	3
44	M1630 (Ostomy)= 1 or 2	4	12	2	8
45	M2030 (Injectable Drug Use) = 0, 1, 2, or 3	.	.	.	.
<b>FUNCTIONAL DIMENSION</b>					
46	M1810 or M1820 (Dressing upper or lower body)= 1, 2, or 3	1	.	1	.
47	M1830 (Bathing) = 2 or more	6	5	5	2
48	M1840 (Toilet transferring) = 2 or more	1	2	.	.

<sup>1</sup>M1308 ‘Current Number of Unhealed Pressure Ulcers at Each Stage or Unstageable’ will be changed to M1311 ‘Current Number of Unhealed Pressure Ulcers at Each Stage’ under the new OASIS C2 format, effective January 1, 2017.

Case-Mix Adjustment Variables and Scores					
49	M1850 (Transferring) = 2 or more	3	1	2	.
50	M1860 (Ambulation) = 1, 2 or 3	7	.	4	.
51	M1860 (Ambulation) = 4 or more	8	9	6	8

Source: CY 2015 Medicare claims data for episodes ending on or before December 31, 2015 (as of June 30, 2016) for which we had a linked OASIS assessment. LUPA episodes, outlier episodes, and episodes with SCIC or PEP adjustments were excluded. Note(s): Points are additive; however, points may not be given for the same line item in the table more than once.

In updating the four-equation model for CY 2017, using complete 2015 data as of June 30, 2016 (the last update to the four-equation model for CY 2016 used 2014 data), there were few changes to the point values for the variables in the four-equation model. These relatively minor changes reflect the change in the relationship between the grouper variables and resource use between 2014 and 2015. The CY 2017 four-equation model resulted in 119 point-giving variables being used in the model (as compared to the 124 point-giving variables for the 2016 recalibration). Of those 119 variables, the CY 2017 four-equation model had 113 variables that were also present in the CY 2016 four-equation model. Of those 113 variables, the points for 33 variables increased in the CY 2017 four-equation model compared to CY 2016 and the points for 33 variables decreased in the CY 2017 4-equation model compared to CY 2016. There were 47 variables with the same point values between CY 2016 and CY 2017. There were 6 variables that were added to the model in CY 2017 that weren't in the model in CY 2016. Also, 11 variables were in the model in CY 2016 but dropped in CY 2017 due to the absence of additional resources associated with these variables. In other words, these variables are not associated with additional resources beyond what is captured by the other case-mix adjustment variables in the regression model.

Step 2: Re-define the clinical and functional thresholds so they are reflective of the new points associated with the CY 2017 four-equation model. After estimating the points for each of the variables and summing the clinical and functional points for each episode, we look at the distribution of the clinical score and functional score, breaking the episodes into different steps.

The categorizations for the steps are as follows:

- Step 1: First and second episodes, 0-13 therapy visits.
- Step 2.1: First and second episodes, 14-19 therapy visits.
- Step 2.2: Third episodes and beyond, 14-19 therapy visits.
- Step 3: Third episodes and beyond, 0-13 therapy visits.
- Step 4: Episodes with 20+ therapy visits

We then divide the distribution of the clinical score for episodes within a step such that a third of episodes are classified as low clinical score, a third of episodes are classified as medium clinical score, and a third of episodes are classified as high clinical score. The same approach is then done looking at the functional score. It was not always possible to evenly divide the episodes within each step into thirds due to many episodes being clustered around one particular score.<sup>2</sup> Also, we looked at the average resource use associated with each clinical and functional score and used that to guide where we placed our thresholds. We tried to group scores with similar average resource use within the same level (even if it meant that more or less than a third of episodes were placed within a level). The new thresholds, based off of the CY 2017 four-equation model points are shown in Table 4.

**TABLE 4: CY 2017 Clinical and Functional Thresholds**

	1st and 2nd Episodes		3rd+ Episodes		All Episodes
	0 to 13 therapy visits	14 to 19 therapy visits	0 to 13 therapy visits	14 to 19 therapy visits	20+ therapy visits
Grouping Step:	1	2.1	3	2.2	4
Equation(s) used to calculate points: (see Table 3)	1	2	3	4	(2&4)

<sup>2</sup> For Step 1, 49.2 percent of episodes were in the medium functional level (All with score 14).  
 For Step 2.1, 70.7 percent of episodes were in the low functional level (Most with score 5 and 6).  
 For Step 2.2, 78.7 percent of episodes were in the medium functional level (Most with score 2).  
 For Step 3, 51.0 percent of episodes were in the medium functional level (Most with score 10).  
 For Step 4, 51.2 percent of episodes were in the medium functional level (Most with score 5 and 6).

Dimension	Severity Level					
Clinical	C1	0 to 1	0 to 1	0 to 1	0 to 1	0 to 3
	C2	2 to 3	2 to 7	2	2 to 9	4 to 16
	C3	4+	8+	3+	10+	17+
Functional	F1	0 to 13	0 to 6	0 to 6	0 to 1	0 to 2
	F2	14	7 to 13	7 to 10	2 to 9	3 to 6
	F3	15+	14+	11+	10+	7+

Step 3: Once the clinical and functional thresholds are determined and each episode is assigned a clinical and functional level, the payment regression is estimated with an episode’s wage-weighted minutes of care as the dependent variable. Independent variables in the model are indicators for the step of the episode as well as the clinical and functional levels within each step of the episode. Like the four-equation model, the payment regression model is also estimated with robust standard errors that are clustered at the beneficiary level. Table 5 shows the regression coefficients for the variables in the payment regression model updated with CY 2015 data. The R-squared value for the payment regression model is 0.4929 (an increase from 0.4822 for the CY 2016 recalibration).