

APPENDIX B: MODEL YEAR 1& 2 SNF UPDATE FACTOR CALCULATION

The SNF case-mix classification system was replaced with a new system, the Patient-Driven Payment Model (PDPM), on October 1, 2019. The PDPM classifies residents into case-mix groups based on clinical characteristics of five components: physical therapy (PT), occupational therapy (OT), speech-language pathology (SLP), nursing, and non-therapy ancillary (NTA) services. The PDPM also applies a variable per diem (VPD) adjustment to the PT, OT, and NTA components to adjust payment in a manner that reflects typical changes in resource use over the course of a given SNF stay as inferred from recent data. To account for these payment system changes, the SNF update factor now has two components: One component uses baseline year claims and updates prices from the baseline year to a reference period using RUG-IV payment rates. The other component uses reference period claims and updates prices from the reference period to the Model Year and accounts for the change from RUG-IV to PDPM. The reference period must contain claims with both RUG-IV and PDPM data, ideally from the last full year of data containing the last quarter of the baseline period. For the SNF update factors for the final quarter of Model Year 2, there is only one baseline quarter with the PDPM data, so the reference period is 2016Q4 (FY2017Q1).

It is possible that certain ACHs will have low, or zero SNF claim counts in 2016Q4, the reference period. In order to avoid high variability in update factors due to low volume and missing update factors due to zero volume, the second component of the SNF update factors will only be calculated individually for ACHs that meet a minimum threshold of 41 Clinical Episodes with SNF spending during the reference period. If the ACH does not meet this threshold, the second component of the SNF update factor will instead be calculated using all Clinical Episodes from the ACH's peer group¹. In case the peer group also does not meet the threshold, the second component of the SNF update factor will instead be calculated using all Clinical Episodes from the national set of ACHs.

- **Step A1. Calculate three SNF factors for each ACH and baseline year level:** For each ACH and baseline (calendar) year, calculate the SNF factor once using baseline year claims² that were initiated at the ACH and RUG-IV rates from the fiscal year overlapping the first three quarters of the baseline year, once using baseline year claims and RUG-IV rates from the fiscal year overlapping the last quarter of the baseline year, and once using baseline year claims and reference period RUG-IV rates. An ACH's factor for the SNF setting is defined as shown below for the RUG IV payment model.

¹ ACHs are considered to be in the same peer group if and only if they are in the same size category (small, medium, large, or extra-large), are in the same census division, have the same AMC-urban/rural status (options are AMC, urban non-AMC, and rural non-AMC), and have the same safety net status.

² Baseline year claims are those grouped to Clinical Episodes with their anchor end date in the baseline year.

Appendix Table 1b: Component 1 of Update Factor

Numerator	Denominator	Ratio
\$165	\$131.25	1.257

- **Step A3. For each ACH, calculate the total cost of the reference period SNF claims under RUG-IV reference period rates and Model Year PDPM rates:**

For each ACH, calculate the total cost of the reference period SNF claims initiated at the ACH once using reference period RUG-IV rates, and once using Model Year PDPM rates. The reference period will contain all claims associated with a SNF stay with a start date on or after October 1, 2016 where the SNF stay has a PDPM payment amount and the corresponding claims have payment rates for RUG-IV.³

The total cost of claims under the RUG-IV payment system is defined as shown below.

$$C_{RUG,P}^T = \sum_{i=1}^k RUG_Rate_{i,p} REV_UNIT_i$$

where P is the time period the rates are from, T is the time period claims are taken from, $C_{RUG,P}^T$ is the cost of period T claims under period P RUG-IV rate, k is the number of SNF lines the ACH has in the period T , i indexes these lines, $RUG_Rate_{i,p}$ is the period P RUG-IV case mix adjusted Rate corresponding to line i and REV_UNIT_i is the Revenue Center Unit Count for line i .

The following methodology is applied to calculate the total cost of reference period claims under the PDPM payment system.

- For each SNF stay and case-mix group (CMG), calculate the payment rate as the average of the rural payment rate and the urban payment rate. The payment rate reflects the base rate multiplied by Case Mix Index (CMI).

$$AvgCMG_c = \frac{CMG_c CMI Rural * CMG_c Rate Rural + CMG_c CMI Urban * CMG_c Rate Urban}{2}$$

where, $c = \{OT, PT, SLP, NRSNG, NTA\}$

- For each SNF stay, calculate non-case-mix-adjusted payment as the average of urban and rural non-case-mix base rate.

$$AvgNonCM = \frac{NonCM Rate Rural + NonCM Rate Urban}{2}$$

- For each SNF stay, calculate the PDPM payment as the weighted sum of the payment rates of PDPM components and the non-case-mix adjusted payment. The weights for

³ Note that all SNF stays (and their corresponding claims) that are collapsed as an interrupted stay under PDPM will be included in the calculation if at least one claim from that interrupted stay qualifies for the reference period.

PDPM components and non-case-mix group are Variable Per Diem (VPD) adjusted total utilization days and total utilization days, respectively.

$$PDPM_s = \sum_c (AvgCMG_c * VPD Adj Util Days_c) + (AvgNonCM * Util Days_s)$$

where, s=SNF stay

- Calculate the total cost of reference period SNF claims under PDPM as the sum of PDPM payments over all stays corresponding to the reference period claims.

$$C_{PDPM,P}^T = \sum_{j=1}^s PDPM_{j,P}$$

where P is the time period the rates are from, T is the time period claims are taken from, $C_{PDPM,P}^T$ is the cost of period T claims under period P PDPM rate, s is the number of SNF stays the ACH has in the period T , j indexes these stays and $PDPM_{j,P}$ is the period P PDPM case mix adjusted rate corresponding to stay j .

- **Step A4. For each peer group, calculate the total cost of the reference period SNF claims under RUG-IV reference period rates and Model Year PDPM rates:**

For each peer group, calculate the total cost of reference period SNF claims twice: using reference period RUG-IV rates once and using Model Year PDPM rates for the other.

- **Step A5. Using the national set of reference period SNF claims, calculate the total cost of the reference period SNF claims under RUG-IV reference period rates and Model Year PDPM rates:**

Calculate the national total cost of reference period SNF claims twice: once using reference period RUG-IV rates, and once using Model Year PDPM rates.

- **Step A6. Calculate second component of the SNF update factor:** The second component updates prices from the reference period to the Model Year and accounts for the change from RUG-IV to PDPM by dividing the total cost of the reference period stays in 2020 under PDPM, by the total cost of the reference period claims under RUG-IV in the reference period.

$$UF \text{ Component } 2 = \frac{C_{PDPM,FY20}^{2016Q4}}{C_{RUG,FY17}^{2016Q4}}$$

For each ACH that meets a threshold of 41 Clinical Episodes with SNF spending during the reference period, use the individual ACH's SNF costs from Step A3 to calculate the second component of the update factor. For ACHs that do not meet the threshold but belong to a peer group that does meet the threshold, use the peer group's SNF costs from Step A4 to calculate the second component of the update factor. For ACHs that do not meet the threshold and belong to a peer group that does not meet the threshold, use the national SNF costs to calculate the second component of the update factor.

Table 2 below continues the example from Table 1 and displays how the second component of the example update factor is calculated. The last 3 claims in the Table are considered

reference period claims. Note that claim 5 is included as a reference period claim, in spite of being outside the Clinical Episode window, since it is part of a SNF stay where one of the other claims (claim 4) qualifies for the reference period.

Since this is an illustrative example, we use a small number of claims and ignore the minimum volume threshold. If an ACH had only 3 reference period claims in the actual data, the second component of its update factor would be calculated either at the peer group or at the national level. To get the numerator of the second component of the update factor, add the total cost of the reference period stays under PDPM FY2020. This is equal to \$140 + \$350 = \$490. To get the denominator of the update factor, add the total cost of the reference period claims under RUG-IV. This is equal to \$130 + \$130 + \$200 = \$460. To get the second component of the update factor, divide the numerator by the denominator, which gives \$490 / \$460 = 1.065.

Appendix Table 2: Example of Component 2 of Update Factor for SNF setting

PDPM stay ID	Claim Number	Claim Start Date	Cost Under RUG-IV (FY2017)	Cost Under PDPM (FY2017)	Cost Under PDPM (FY2020)
n/a	1	1-Jun-2015	\$130	n/a	n/a
n/a	2	15-Aug-2015	\$200	n/a	n/a
0001	3	13-Oct-2016	\$130	\$125	\$140
0002	4	1-Dec-2016	\$130	\$340	\$350
0002	5	4-Jan-2017	\$200		

Appendix Table 2b: Component 2 of Update Factor

Numerator	Denominator	Ratio
\$490	\$460	1.065

- **Step A7. Calculate the update factor:** Multiply the first and second component to calculate the update factor.

$$UF_{SNF, FY20}^{BY} = \frac{F_{RUG, FY17}^{BY}}{0.25F_{RUG, BY+1}^{BY} + 0.75F_{RUG, BY}^{BY}} \times \frac{C_{PDPM, FY20}^{2016Q4}}{C_{RUG, FY17}^{2016Q4}}$$

Continuing with the example from above, the update factor will be calculated as:

$$UF_{SNF, FY20}^{CY15} = 1.257 \times 1.065$$

$$= 1.339$$

- **Step A8. Run Steps 22-26** to assign Clinical Episodes to participating ACHs as per usual.