

# Methodology Used for Case Mix Classification

## Introduction

The Iowa Medicaid Quality Improvement Organization (QIO) Unit contracts with Department of Health and Human Services (HHS) to calculate the case mix index for Iowa nursing facilities. The case mix index (CMI) is used in the calculation of a portion of the direct care component of each facility's rate.

The MDS is used to calculate each resident's Patient Driven Payment Model (PDPM) classification and case mix groups. There are four components that make up the total PDPM. Physical therapy/Occupational therapy (PT/OT), speech-language pathology (SLP), nursing, and non-therapy ancillaries (NTA). For Iowa case mix purposes, only the Nursing Component will be utilized, which is the third position character. For MDSs with a target date of July 1, 2023, or after, PDPM Nursing Component CMI will be used, for rates going into effect on 7/1/2024. There are 25 nursing groups that a resident can be classified into. See Chapter 6.6 in the RAI Manual for calculation details on the nursing component. Iowa Medicaid will assign a CMI to each of the 25 nursing groups and that will be listed on the case mix roster.

## Purpose of a Case Mix Roster

The facility case mix roster is a report of residents residing in each Medicaid certified nursing facility during the resident roster quarter based on the Minimum Data Set (MDS) assessments and tracking forms that have been completed and transmitted electronically to the internet Quality Improvement Evaluation System (iQIES). A pre-defined nursing group component is assigned to each MDS assessment completed that calculates a PDPM score. Based upon that nursing component, a corresponding CMI will be assigned by Iowa Medicaid. A day weighted CMI is created using this data.

## Review of Preliminary Case Mix Roster

The preliminary case mix index roster is provided to the facility to determine if any missing or incorrect records are noted and allow a review period for facilities to make corrections as needed. Once the facility has access to the roster, they should review it for accuracy. The following are some areas that should be reviewed but not limited to only these areas.

- The facility should check to ensure that all residents who were present at any time during the quarter are listed on the roster.
- Review the listed assessments and tracking forms for each resident to determine that every assessment/tracking form is identified on the roster.
- Review for missing or corrected assessments that may have been completed but were either not transmitted or were not accepted by the iQIES system. Review the CMS Validation report for errors that may need corrected and retransmit, if applicable.

- All corrections to the preliminary case mix index roster must be done by completing a modification, inactivation and/or transmission of the MDS assessment and tracking record (in accordance with Chapter 5 of the RAI manual and CMS correction policy) on or before the cutoff date for preliminary corrections.
- Important Case Mix Dates for quarterly cutoffs are available in IMPA
- No manual alterations of the resident roster are considered.

### **PDPM Nursing HIPPS Code and Case Mix Index Chart**

<b>PDPM NURSING HIPPS CODE</b>	<b>PDPM NURSING CASE MIX INDEX</b>
<b>A</b>	<b>4.06</b>
<b>B</b>	<b>3.07</b>
<b>C</b>	<b>2.93</b>
<b>D</b>	<b>2.40</b>
<b>E</b>	<b>1.99</b>
<b>F</b>	<b>2.24</b>
<b>G</b>	<b>1.86</b>
<b>H</b>	<b>2.08</b>
<b>I</b>	<b>1.73</b>
<b>J</b>	<b>1.72</b>
<b>K</b>	<b>1.43</b>
<b>L</b>	<b>1.87</b>
<b>M</b>	<b>1.62</b>
<b>N</b>	<b>1.55</b>
<b>O</b>	<b>1.09</b>
<b>P</b>	<b>1.34</b>
<b>Q</b>	<b>0.94</b>
<b>R</b>	<b>1.04</b>
<b>S</b>	<b>0.99</b>
<b>T</b>	<b>1.57</b>
<b>U</b>	<b>1.47</b>
<b>V</b>	<b>1.22</b>
<b>W</b>	<b>0.71</b>
<b>X</b>	<b>1.13</b>
<b>Y</b>	<b>0.66</b>
<b>Default ZZ</b>	<b>0.66</b>

## Reporting Periods for Day-Weighted CMI

The day weighted case mix index rosters will be by uploaded to IMPA on a quarterly basis for nursing facility providers to access.

Day-Weighted CMI Schedule		
Quarterly	Quarter 1	January 1 - March 31
	Quarter 2	April 1 - June 30
	Quarter 3	July 1 - September 30
	Quarter 4	October 1 - December 31

## General Calculation Guidelines for Day Weighted CMI

- Inactivated assessments at time of pull are not counted in the case mix roster.
- The most current modification/correction of the assessment at time of pull is counted.
- Death in facility records and discharge assessments are only used to obtain the date of discharge and discharge status.
- Calculation of days include the day of admission. The day of discharge is not included.
- Days are counted from the entry date if the resident entered the facility during the quarter, or the first day of the quarter if the resident had a previous assessment containing a PDPM nursing component. Days will be counted until the assessment reference date (ARD) (A2300) of the next assessment, the end of the quarter or until the resident is discharged, whichever comes first, unless the maximum number of days for the assessment has been reached.

### Example

In this example, the Annual assessment was transmitted with the following:

- Assessment reference date (A2300) 10/4/23

The next Quarterly assessment was transmitted with the following:

- Assessment reference date (A2300) 1/3/24

The Annual assessment from the previous quarter was used to begin counting on the first day of the quarter until the ARD (A2300) of the Quarterly assessment. The Quarterly assessment began counting days on the ARD (A2300) until the end of the quarter.

ISC	Start Date	Target Date	End Date	PDPM Nrsng	CMI	Days	Weight	Pay Source
A0310A/B/F								
NC/03/99/99	01/01/2024	10/04/2023	01/03/2024	D	2.40	2	4.8	Medicaid
NQ/02/99/99	01/03/2024	01/03/2024	04/01/2024	L	1.87	89	166.43	Medicaid

- CMS requirements allow no more than 92 days between assessments. The state of Iowa has determined that for case mix purposes each assessment is considered active for a maximum of 113 days, starting with the ARD (A2300). An assessment that has not been followed by another OBRA assessment, discharge assessment, or death in facility tracking form within 113 days of the preceding OBRA assessment record's ARD will not have additional days counted after day 113. The record is then considered inactive or expired. During the inactive period following an expired assessment (starting on day 114) until the start of the next assessment A2300 or the end of the quarter, whichever comes first, days are counted at the delinquent PDPM nursing component classification ZZ.

**Example**

In this example, the Annual assessment was transmitted with the following:

- Assessment reference date (A2300) 10/28/23

The next assessment was a Quarterly assessment transmitted with the following:

- Assessment reference date (A2300) 3/15/24

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsng	CMI	Days	Weight	Pay Source
NC/03/99/99	01/01/2024	10/28/2023	02/18/2024	D	2.40	48	115.20	Medicaid
113///	02/18/2024	02/18/2024	03/15/2024	ZZ	0.66	26	17.16	Medicaid
NQ/02/99/99	03/15/2024	03/15/2024	04/01/2024	L	1.87	17	31.79	Medicaid

Adding 112 days to the A2300 date of the annual assessment would result in 2/17/2024, 113 day.

Starting day 114 (2/18/24) until the A2300 date of the next Quarterly assessment (3/15/24), the days are counted at a delinquent PDPM nursing component classification of ZZ.

The days from the second Quarterly assessment are counted from the A2300 (3/15/24) through the last day of the quarter.

- The PDPM nursing component on the admission assessment will begin counting days starting with the entry date. When there are more than 14 days between the admission entry date (A1600) and the ARD (A2300) of the admission assessment, the entry date or start of the quarter is used to begin counting days at the delinquent PDPM nursing component classification of ZZ until the ARD (A2300). The PDPM nursing component calculated from the admission assessment will then begin counting the days starting with the ARD.

**Example**

In this example, the Entry Tracking Form was transmitted with the following:

- Entry date (A1600) 1/10/24

The Admission assessment was transmitted with the following:

- Assessment reference date (A2300) 1/25/24
- Entry date (A1600) on Admission assessment 1/10/24

Delinquent days begin on the Entry date of 1/10/24 and continue until the A2300 date of the Admission assessment.

The Admission assessment starts with A2300 date of 1/25/24 through the end of the quarter.

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NT/99/99/01	01/10/2024	01/10/2024	01/25/2024	ZZ	0.66	15	9.90	Other
NC/01/99/99	01/25/2024	01/25/2024	04/01/2024	L	1.87	67	125.29	Other

- For residents that have a PDPM nursing component in the previous quarter that carries forward into current quarter but then discharges in current quarter and later returns as a new admission (A1700=1), the admission assessment will start recounting days at entry date.

**Example**

In this example, the Quarterly assessment was transmitted with the following:

- Assessment reference date (A2300) 12/12/23

The discharge assessment (discharge return not anticipated) was transmitted with the following:

- Discharge date (A2000) 3/1/24

The Entry Tracking Form was transmitted with the following:

- Entry date (A1600) 3/3/24 and Entry Type (A1700=1) Admission

The Admission assessment was transmitted with the following:

- Assessment reference date (A2300) 3/10/24
- Entry date (A1600) 3/3/24

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NQ/02/99/99	01/01/2024	12/12/2023	03/01/2024	P	1.34	60	80.40	Other
ND/99/99/10	03/01/2024	03/01/2024	03/03/2024					Other
NT/99/99/01	03/03/2024	03/03/2024	03/10/2024	K	1.43	7	10.01	Other
NC/01/99/99	03/10/2024	03/10/2024	04/01/2024	K	1.43	22	31.46	Other

The Quarterly assessment from the previous quarter was used to begin counting on the first day of this quarter until the day of discharge. Since this was a discharge return not anticipated, the next Admission assessment is used to count days beginning on the day of new entry (A1600).

- For residents that have a PDPM nursing component in the previous quarter that carries forward into the current quarter and then discharges in the same current quarter and later re-enters (A1700=2), the previous active assessment will be counted again starting with the day of re-entry until the ARD of the next assessment completed.

**Example**

In this example, the Quarterly assessment was transmitted with the following:

- Assessment reference date (A2300) 12/12/23

The discharge assessment (discharge return anticipated) was transmitted with the following:

- Discharge date (A2000) 1/17/24

The Entry Tracking Form was transmitted with the following:

- Entry date (A1600) 1/19/24 and Entry Type (A1700=2) Re-entry

The Significant change in status assessment was transmitted with the following:

- Assessment reference date (A2300) 2/11/24
- Entry date (A1600) 1/19/24

The discharge assessment was transmitted with the following:

- Discharge date (A2000) 3/15/24
- Discharge status was deceased (A2100/A2150)=8)

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NQ/02/99/99	01/01/2024	12/12/2023	01/17/2024	P	1.34	16	21.44	Medicaid
ND/99/99/11	01/17/2024	01/17/2024	01/19/2024					Other
NT/99/99/01	01/19/2024	01/19/2024	02/11/2024		1.34	23	30.82	Medicaid
NC/04/99/99	02/11/2024	02/11/2024	03/15/2024	K	1.43	33	47.19	Medicaid
NT/99/99/12	03/15/2024	03/15/2024	04/01/2024					Other

The Quarterly assessment from the previous quarter was used to begin counting on the first day of this quarter until the day of discharge. When the resident returned to the facility, that previous assessment was used to begin counting on the reentry date until the A2300 date of the Significant change in status assessment. This assessment was used to count the days beginning on the A2300 date until the date of death.

- If there is more than one discharge assessment submitted with no other assessments in between, the earliest discharge date will stop the count of days.

**Example**

In this example, the Quarterly assessment was transmitted with the following:

- Assessment reference date (A2300) 12/31/23

First Discharge assessment (discharge return anticipated) was transmitted with the following:

- Discharge date (A2000) 1/18/24

Second Discharge assessment (discharge return not anticipated) was transmitted with the following:

- Discharge date (A2000) 2/5/24

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NQ/02/99/99	01/01/2024	12/31/2023	01/18/2024		0.66	17	11.22	Other
ND/99/99/11	01/18/2024	01/18/2024	04/01/2024					Other
NT/99/99/10	02/05/2024	02/05/2024	04/01/2024					Other

- When an entry tracking form is submitted as a new stay in the facility (A1700=1) and it is only followed by a discharge assessment or death in facility tracking form, the PDPM nursing component will be assigned based upon the discharge status (A2105) from the entry date (A1600) to the day prior to discharge (A2000) up to a maximum of 14 days.
- For target dates of 7/1/23 through 9/30/23:
  - A2100= 03, 05, 08, or 09. Assign nursing component I with CMI of 1.73
  - A2100= 01,02,04,06,07, or 99. Assign nursing component P with CMI of 1.34
- For target dates on or after 10/1/23:
  - A2105= 03,04,05,06,11 or 13. Assign nursing component I with CMI of 1.73
  - A2105= 01,02,07,08,09,10,12, or 99. Assign nursing component P with CMI of 1.34

### Example

In this example, the Entry Tracking Form was transmitted with the following:

- Entry date (A1600) 3/10/23 and Entry type (A1700=1) Admission

The discharge assessment (discharge return not anticipated) was transmitted with the following:

- Discharge date (A2000) 3/20/23

Discharge status (A2105= 01) to the community

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NT/99/99/01	03/10/2024	03/10/2024	03/20/2024		1.34	10	13.40	Other
ND/99/99/10	01/25/2024	01/25/2024	04/01/2024					Other

**Note:** If a 5 Day PPS assessment has been completed, but not an OBRA admission, the PPS assessment will be used from the entry date until the day prior to discharge.

- If a resident has an admission entry tracking form (A1700=1) at the end of the quarter that is not followed by an assessment within 14 days of that same quarter, the first record in the next quarter within 14 days from the date of entry will be used from the date of entry to the end of the quarter.

**Example**

In this example, the Entry Tracking Form was transmitted with the following:

- Entry date (A1600) 3/30/24 and Entry type (A1700=1) Admission

The Admission assessment was transmitted with the following:

- Assessment reference date (A2300) 4/5/24

Entry date (A1600) 3/30/24

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NT/99/99/01	03/30/2024	03/30/2024	04/01/2024		1.34	2	2.68	Other
ND/01/99/99	04/01/2024	04/05/2024		P	1.34			

- When a quarterly assessment is completed before an admission assessment, the admission assessment only starts with the ARD instead of entry date since an admission assessment (A0310A=1) shouldn't immediately follow another OBRA assessment.

**Example**

In this example, the Quarterly assessment was transmitted with the following:

- Assessment reference date (A2300) 12/8/23

The Admission assessment was transmitted with the following:

- Assessment reference date (A2300) 1/31/24
- Entry date (A1600) 1/24/24

The Quarterly assessment from the previous quarter was used to begin counting days in this quarter. The Admission assessment ARD (A2300) was used to begin counting of additional days instead of the Entry date (A1600) because this Admission assessment followed a Quarterly assessment.

ISC A0310A/B/F	Start Date	Target Date	End Date	PDPM Nrsg	CMI	Days	Weight	Pay Source
NQ/02/99/99	01/01/2024	12/08/2023	01/31/2024	P	1.34	30	40.20	Other
NC/01/99/99	01/31/2024	01/31/2024	04/01/2024	D	2.40	61	146.40	Other

## Determination of Payor Source

The payer source is identified with each assessment. There are three payer types: Medicare, Medicaid, and Other.

Payer Source Type	
Medicare	Assessments identified as PPS in A0310B=01
Medicaid	<ul style="list-style-type: none"> <li>▪ Non-PPS assessments and had a Medicaid number entered in A0700</li> <li>▪ The Medicaid number should be seven digits followed by a letter</li> <li>▪ Any incorrect Medicaid numbers will not be identified as Medicaid</li> </ul>
Other	Any assessment not identified as either Medicare or Medicaid

## Table Definitions for Case Mix Index Methodology

OBRA Assessment (A0310A)	MDS 3.0 Item Set Code (ISC)	A0310A
Admission	NC	01
Quarterly	NQ	02
Annual	NC	03
Significant Change in Status	NC	04
Significant Correction to Prior Comprehensive Assessment	NC	05
Significant Correction to Prior Quarterly Assessment	NQ	06

OBRA Assessment (A0310A)	MDS 3.0 Item Set Code (ISC)	A0310B
5 Day	NP	01

Discharge Assessments (A0310F)	MDS 3.0 Item Set Code (ISC)	A0310F
Discharge Return Not Anticipated	ND	10
Discharge Return Anticipated	ND	11

MDS Tracking Forms (A0310F)	MDS 3.0 Item Set Code (ISC)	A0310F
Entry/Re-entry	NT	01
Discharge-Death in Facility	NT	12

## Sequence of Assessment Types

MDS assessments may be combined in accordance with RAI Manual Chapter 2. For roster purposes, the sequence of assessment types will be:

- A0310A, OBRA Assessments
- A0310B, PPS/Medicare Assessments
- A0310F, Entry/Discharge Tracking Forms

For example, the record type shown on the roster report as NT/99/99/01 indicates the Entry Tracking Form and NQ/02/99/99 indicates an OBRA Quarterly not combined with a PPS assessment or tracking records. The record type NC/01/01/99 indicates a combined OBRA admission and 5-day PPS assessment.

## Definitions for Case Mix Roster

- **Start Date:** The start date is calculated from the start of the quarter or the target date of an assessment.
- **Target Date:** The MDS item date from either the Assessment Reference Date (ARD) in A2300 or the discharge date in A2000 or the Entry/Re-entry date in A1600.
- **End Date:** The end date is the day the Case Mix Index (CMI) is no longer valid for that line. It may be the day after the end of the quarter, the ARD of the next assessment, or the discharge date. The end date is not calculated into the count of days.
- **PDPM Nrsg:** PDPM Nursing Component character. It is the third position in the total PDPM.
- **CMI:** A numerical score assigned to each of the PDPM Nursing Components or a default rate.
- **Days:** The number of days that will be counted at the CMI listed on that line.
- **Weight:** The weight is the CMI points assigned to the assessment multiplied by the number of days.
- **Pay Source:** The payment source assigned to the assessment type. (See determination of payer source for further explanation.)

## Roster CMI calculations

- The calculations at the end of the roster include CMI day weighted points for each of the 3 payer types.
- For Medicaid, Medicare, and other payer types, days, weight, and CMI averages are generated separately.
- The day weighted average of each payer source is calculated by dividing the total CMI weight by the total days.
- The facility weighted average is calculated by dividing the total CMI weight across the 3 payer types by the total number of days across all payer types.