



Long-Term Care Hospital Quality Reporting Program Measure Calculations and Reporting User's Manual Version 3.1.2

Prepared for

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Quality Measure, Assessment Instrument
Development, Maintenance and Quality
Reporting Program Support for the Long-Term
Care Hospital (LTCH), Inpatient Rehabilitation
Facility (IRF), Skilled Nursing Facility (SNF)
QRPs and Nursing Home Compare (NHC)

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Overview

This addendum provides quality measure updates to the Long-Term Care Hospital (LTCH) Quality Reporting Program (QRP) Measure Calculations and Reporting User's Manual, Version 3.1. This addendum, titled LTCH QRP Measure Calculations and Reporting User's Manual, Version 3.1.2, provides measure-related changes specified in a change table format in lieu of a complete update to the overall manual. Updates are provided in a table below by manual chapter, section, page number, step/table indicator, updated language with strikeouts of prior language, and the description of the change. The step/table column adds specificity in locating the edits by indicating if the edits are located within a specific step or table on a given page. When edits are not found in a specific step/table, the column displays "N/A".

Measure-related changes delineated in this change table include an update to the LTCH QRP Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) measure that includes changes to the CMS ID and age criteria. There are also updates to the data submission language, to the table summary of measure types by user-requested years in Table 5-2, and to the table summary of data included in the cumulative rate for each requested quarter end date for Tables 5-5 and 5-7. Changes included in Table 5-2 include the user-requested years, addition of new measures, and corrections of previous manual errors. Changes to Table 5-5 consist of updates to the date windows for which data are included in cumulative rate for Quarter 1, 2019 through Quarter 4, 2021. Changes to Table 5-7 include updates to the dates, iQIES calculation months and date windows for which data is included in the cumulative rate for each iQIES QM report calculation month for Quarter 1, 2019 through Quarter 4, 2021. This document also clarifies the removal of the retired pressure ulcer quality measure, Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02). In addition, the Discharge to Community quality measure is updated to include an exclusion for residents in long-term nursing facilities. Further, there are clarifications to the expected score formula for the pressure ulcer measure, Change in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01), and to the predicted and expected score formulas for the Ventilator Liberation Rate measure (CMS ID: L023.01).

LTCH QRP Measure Calculations and Reporting User’s Manual V3.1.2 Updates

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User’s Manual V3.1.2	Description of Change
1.	Table of Contents	N/A	iii	N/A	Section 6.1: Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02).....31	Updated to reflect the removal of pressure ulcer measure.
2.	Table of Contents	N/A	iii	N/A	Section 6.4: Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04).....44	Incremented CMS measure identifier.
3.	List of Tables	N/A	v	N/A	Measure Logic Specification Tables 7-1 Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02).....74	Updated to reflect the removal of pressure ulcer measure.
4.	List of Tables	N/A	v	N/A	Measure Logic Specification Tables 7-4 Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04).....79	Incremented CMS measure identifier.
5.	List of Tables	N/A	v	N/A	Appendix Tables A-2 Risk Adjustment Covariates for the Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678).....99	Updated to reflect the removal of pressure ulcer measure.
6.	1	1.3	8	Table 1-1	Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay)^a (NQF# 0678) (CMS ID L001.02) ^aThis measure is NQF-endorsed for use in the LTCH setting (https://www.qualityforum.org/QPS/0678) (in addition to inpatient rehabilitation facility and skilled nursing facility/nursing home settings) and is finalized for reporting by LTCHs under the FY 2012 IPPS/LTCH PPS final rule (76 FR 51748 through 51750), FY 2014 IPPS/LTCH PPS final rule (78 FR 50861 through 50863), and FY 2016 IPPS/LTCH PPS final rule (80 FR 49731 through 49736). The use of the words “resident” and “short stay” in the title of this measure refer to the use of this measure in the SNF/NH setting. CMS’s use of these words does not imply that the LTCH patient is a “resident” or that a stay in an LTCH is a “short stay.”	Updated row to reflect the removal of pressure ulcer measure and removed associated footer

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User's Manual V3.1.2	Description of Change
7.	1	1.3	8	Table 1-1	Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF# 2632) (CMS ID: L011.03) (CMS ID: L011.04)	Incremented CMS measure identifier.
8.	3	N/A	13	N/A	•Discharge to Community-Post Acute Care (PAC) Long-Term Care Hospital Quality Reporting Program (NQF #3480) (CMS ID: L018.01) CMS ID: L018.02)	Incremented CMS measure identifier.
9.	3	N/A	13	N/A	This measure reports an LTCH's risk-standardized rate of Medicare FFS patients who are discharged to the community following an LTCH stay, and do not have an unplanned readmission to an acute care hospital or LTCH in the 31 days following discharge to community, and who remain alive during the 31 days following discharge to community. Community, for this measure, is defined as home or self-care, with or without home health services. <i>A new measure denominator exclusion was finalized in the FY 2020 IPPS/LTCH PPS final rule to exclude LTCH stays with baseline NF residents. Baseline NF residents are defined as patients who had a long-term NF stay in the 180 days preceding their hospitalization and LTCH stay, with no intervening community discharge between the long-term NF stay and qualifying hospitalization for measure inclusion.</i>	Added language to characterize the addition of the denominator exclusion for removing baseline nursing facility residents.
10.	4	4.1	15	N/A	Quality measures included in this section: Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)	Updated to reflect the removal of pressure ulcer measure.
11.	4	4.1	15	N/A	Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03) CMS ID: L011.04)	Incremented CMS measure identifier.
12.	4	4.1	16	3	a. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02), Table 7-1	Updated to reflect the removal of pressure ulcer measure.
13.	4	4.1	16	3	d. Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03) CMS ID: L011.04), Table 7-4	Incremented CMS measure identifier.
14.	4	4.1	17	Table 4-1	Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)	Updated row to reflect the removal of pressure ulcer measure.

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User's Manual V3.1.2	Description of Change
15.	4	4.1	17	Table 4-1	Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04)	Incremented CMS measure identifier.
16.	5	5.1	20	1	c. The data will be "frozen" 4.5 months (15th day of the 5th month) after the end of each calendar quarter (data submission deadline). i. e.g., Data will be frozen on August 15th for Quarter 1 (January 1 through March 31) data collection. <i>c. Data submission deadline: data must be submitted by 11:59 p.m. ET on the 15th of August, November, February, or May after the end of each respective quarter. However, if the 15th of the month falls on a Friday, weekend, or federal holiday, the data submission deadline is delayed until 11:59 p.m. ET on the next business day. i. For example, the data submission deadline for Quarter 1 (January 1 through March 31) data collection would normally be 11:59 p.m. ET, August 15, which is the 15th day of the month. However, in FY 2021, August 15th falls on a Sunday; therefore, the deadline for this data submission is extended until the next business day which would be 11:59 p.m. ET on August 16, 2021.</i>	Updated data submission language for clarity and accuracy.
17.	5	5.1	20	4	a. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)	Updated to reflect the removal of pressure ulcer measure.
18.	5	5.1	21	5	a. Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04)	Incremented CMS measure identifier.
19.	5	5.1	22	Table 5-2	Table 5-2 Measure Types by User-Requested Year for all Assessment-Based Quality Measures (LTCH CARE Data Set) (See Appendix for full-page excerpt)	In Table 5-2, the measure type by user-requested years were updated (i.e., 2018 through 2021).
20.	5	5.1	22	Table 5-2	Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04) (See Appendix for full-page excerpt)	Incremented CMS Measure Identifier

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User's Manual V3.1.2	Description of Change
21.	5	5.1	22	Table 5-2	Percent of Residents of Patients with Pressure Ulcers That are New or Worsened (Short Stay)(NQF #0678)(CMS ID: L001.02) (See Appendix for full-page excerpt)	Updated row to reflect the removal of pressure ulcer measure.
22.	5	5.1	25	Table 5-5	Table 5-5 iQIES Review and Correct Reports: Change in Mobility Data Included in the Cumulative Rate (24-months) for Each Requested Quarter End Date ^a (See Appendix for full-page excerpt)	Updated table 5-5 with date windows for which data are included in cumulative rate for Change in Mobility from Q1 2019 through Q4 2021.
23.	5	5.2	26	2	a. Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)	Updated to reflect the removal of pressure ulcer measure.
24.	5	5.2	26	3	a. Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04)	Incremented CMS measure identifier.
25.	5	5.2	28, 29	Table 5-7	Table 5-7 iQIES QM Reports: Change in Mobility Data Included in the Cumulative Rate (24 months) for Each Requested Report End Date (See Appendix for full-page excerpt)	Updated Table 5-7 with dates, iQIES calculation months and date windows for which data is included in QM Report calculation from Q1 2019 through Q4 2021.
26.	6	6.2	40	3.3	<ul style="list-style-type: none"> • X is a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [2], below): $[2] X = \beta_0 + \beta_1 (COV1) + \beta_2 (COV2) + \beta_3 (COV3) + \beta_4 (COV4)$ <p>[3] Probability(Y = 1) = Logit(X)</p> (See Appendix for full-page excerpt)	Clarified the expected score formula description for the Changes in Skin Integrity Post-Acute Care Pressure Ulcer/Injury measure (CMS ID: L021.01). Note: The implementation of the risk-adjustment model calculations were not impacted by this edit.
27.	6	6.2	40	3.3	<ul style="list-style-type: none"> • X Y identifies if patient is part of the numerator count (i.e., triggering the quality measure: 1 = yes, 0 = no). (See Appendix for full-page excerpt)	Clarified the expected score formula description for the Changes in Skin Integrity Post-Acute Care Pressure Ulcer/Injury measure (CMS ID: L021.01). Note: The implementation of the risk-adjustment model calculations were not impacted by this edit.

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User's Manual V3.1.2	Description of Change
28.	6	6.4	44	N/A	Section 6.4: Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04) iQIES Review and Correct Report Measure Calculations for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04)	Incremented CMS measure identifier.
29.	6	6.4	46	3.2	3.2 Patient is younger than 21 18 years: Truncate (Admission Date (A0220) – Birth Date (A0900)). Use exact values in calculating age; do not round to nearest whole number.	Updated age exclusion threshold from 21 to 18 for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support.
30.	6	6.4	47	4	For patient stay records with discharge admission date prior to 07/01/2018: Invasive Mechanical Ventilation Support: weaning (O0100F3 = [1]) or Invasive Mechanical Ventilation Support: non-weaning (O0100F4 = [1]) For patient stay records with discharge admission date on or after 07/01/2018: Invasive Mechanical Ventilation Support: weaning (O0150A = [1]) or Invasive Mechanical Ventilation Support: non-weaning (O0150A = [2])	Correction from “discharge” to “admission” for calculating the target population.
31.	6	6.4	47	N/A	<u>iQIES QM Report Measure Calculations for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04)</u>	Incremented CMS measure identifier.
32.	6	6.4	49	N/A	<u>National Average Calculation for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04)</u>	Incremented CMS measure identifier.
33.	6	6.5	55	2.6	For patients who use a wheelchair as indicated by GG0170Q3=1, include items: •GG0170R3: Wheel 50 feet with two turns •GG0170RR3: Indicate the type of wheelchair/scooter used •GG0170S3. Wheel 150 feet •GG0170SS3. Indicate the type of wheelchair/scooter used	Updates to the Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631) measure.

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User's Manual V3.1.2	Description of Change
34.	6	6.9	70	3.3	<p>Calculate the predicted score for each patient using the following formula:</p> <p>[1] Predicted score = $\frac{1}{[1+e^{-X}]}$</p> <p><i>Where:</i></p> <ul style="list-style-type: none"> Predicted score identifies the predicted probability of ventilator liberation for each patient e is the base of natural logarithms X is calculated as follows: <p>[2] $X = \alpha + \beta_1(COV_1) + \dots + \beta_n(COV_n)$</p> <p>[3] $\alpha = \gamma + \mu$</p>	Clarified the predicted score formula description for the Ventilator Liberation Rate measure (CMS ID: L023.01).
35.	6	6.9	71	3.3	<p>See Appendix A, Table A-5 and the associated Risk-Adjustment Appendix File for the regression constant and coefficients as well as detailed LTCH CARE Data Set coding for each covariate. and see Appendix A, Table A-7 and the associated Risk-Adjustment Appendix File for the list of intercepts associated with each LTCH.¹⁸ The regression constant, regression coefficients, and LTCH-specific intercepts are values obtained through hierarchical logistic regression analysis. Please note that the iQIES QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in Table A-5, Table A-7, and the associated Risk-Adjustment Appendix File.</p>	Removed language referencing Table A-7.
36.	6	6.9	71	4.3	<p>Calculate the expected score for each patient using the following formula:</p> <p>[4] Expected score = $\frac{1}{[1+e^{-Y}]}$</p> <p><i>Where:</i></p> <ul style="list-style-type: none"> Expected score identifies the expected liberation probability of ventilator liberation for each patient e is the base of natural logarithms Y is calculated as follows: <p>[5] $Y = \beta_0 + \beta_1(COV_1) + \dots + \beta_n(COV_n)$</p>	Clarified the expected score formula description for the Ventilator Liberation Rate measure (CMS ID: L023.01).
37.	7	N/A	74-75	Table 7-1 (removed)	Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678) (CMS ID: L001.02)*	Removed Table 7-1.

#	Chapter	Section	Page Number	Step/Table	LTCH QRP Measure Calculations and Reporting User's Manual V3.1.2	Description of Change
38.	7	N/A	77	Table 7-2	2. Bowel Continence: a. Covariate = [1] (yes) if H0400 = [1, 2, 3] ([1] = Occasionally incontinent, [2] = Frequently incontinent, [3] = Always incontinent) b. Covariate = [0] (no) if H0400 = [0, 9, ^, -] ([0] = Always continent, [9] = Not rated, [-] = No response available, [^] = Valid skip)	Removed valid skip [^], since this is not a valid value for H0400 per the LTCH CARE V 4.00 data specifications.
39.	7	N/A	79-83	Table 7-4	Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.03 CMS ID: L011.04) ^a	Incremented CMS measure identifier in table headers.
40.	7	N/A	79	Table 7-4	If an item is not attempted, an 'activity not attempted' code may be used: • 07 (Patient refused) • 09 (Not applicable) • 10 (Not attempted due to environmental limitations) • ^ (skip <i>pattern only valid for items GG0170J1 through GG0170K1</i>) • - (dash) • 88 (Not attempted due to medical condition or safety concerns).	Clarified that the [^] skip pattern only applies to GG0170J1 through GG0170K1.
41.	7	N/A	80	Table 7-4	<i>Exclusions</i> Patient stay is excluded if: Patient is younger than 21 18 years: Age (A0220 minus A0900) < 21 18 years (Age is calculated based on the truncated difference between admission date (A0220) and birth date (A0900); i.e., the difference is not rounded to nearest whole number.)	Updated age exclusion threshold from 21 to 18 for Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility among Patients Requiring Ventilator Support.
42.	7	N/A	85-86	Table 7-5	<i>Specifications for complete discharge functional assessment data:</i> For discharge functional assessment data to be complete, each condition listed below must met. 9. GG0130A3. Eating = [01, 02, 03, 04, 05, 06, 07, 09, 10, 88]; and	Added [10] as a valid response option to item GG0130A3.
43.	Appendix A	N/A	99	Table A-2 (removed)	Table A-2 Risk Adjustment Covariates for the Percent of Residents or Patients with Pressure Ulcers That Are New or Worsened (Short Stay) (NQF #0678)	Removed Table A-2.
44.	Appendix A	N/A	99	Table A-3	Bowel Incontinence = 1 if H0400 = [1, 2, 3] = 0 if H0400 = [0, 9, -, ^]	Removed valid skip [^], since this is not a valid value for H0400 per the LTCH CARE V 4.00 data specifications.
45.	Appendix A	N/A	104	Table A-7 (removed)	Table A-7 LTCH Specific Intercepts in the Hierarchical Logistic Regression Model (Predicted) for the Ventilator Liberation Rate	Removed Table A-7.

Appendix

Appendix Contents

This appendix provides excerpts from the [LTCH QRP Measure Calculations and Reporting User's Manual, V3.1](#) to contextualize the information that has been substantially changed and included in the change table of this addendum, Version 3.1.2 (i.e., the appendix provides the updates to the tables and/or formulas from V3.1 of the manual that have substantial changes). The pages within the appendix directly correspond to the QM User's Manual V3.1 and the updates to the pages have been marked up in red font. Please note: these pages contain footnote numbers that correspond to the footnote numbers included in the QM User's Manual V3.1. As such, the footnote numbers in the appendix do not start at "1" and may not be represented in a consecutive order. For example, footnote 8 in the appendix is not the 8th footnote included in this addenda, but instead is the 8th footnote in the QM User's Manual V3.1.

The Appendix Table of Contents provides an overview of the content contained within the appendix, and maps this content to the corresponding rows in the V3.1.2 change table, as well as the chapter, page number, and section where the content is located in the QM User's Manual V3.1.

Appendix Table of Contents

V3.1.2 Change Table #	V3.1 Chapter	V3.1 Page Number	LTCH QRP Measure Calculations and Reporting User's Manual V3.1 Reference	Updated Section/Table
19., 20., 21.	5	22	Section 5.1: iQIES Review and Correct Reports	Table 5-2: Measure Types by User-Requested Year for all Assessment-Based Quality Measures (LTCH CARE Data Set).
22.	5	25	Section 5.1: iQIES Review and Correct Reports	Table 5-5: iQIES Review and Correct Reports: Change in Mobility Data Included in the Cumulative Rate (24-months) for Each Requested Quarter End Date.
25.	5	28, 29	Section 5.2: iQIES Quality Measure (QM) Reports	Table 5-7: iQIES QM Reports: Change in Mobility Data Included in the Cumulative Rate (24 months) for Each Requested Report End Date.
26., 27.	6	39, 40	Section 6.2: Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)	Section 6.2: iQIES QM Report Measure Calculations for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)
34., 35., 36.	6	69-72	Section 6.9 Ventilator Liberation Rate (CMS ID: L023.01)	Section 6.9: iQIES QM Report Measure Calculations for Ventilator Liberation Rate (CMS ID: L023.01)

Table 5-2

Measure Types by User-Requested Year for all Assessment-Based Quality Measures (LTCH CARE Data Set)⁸

Quality Measure	Measure Type by User-Requested Year			
	2017 2018**	2018- 2019**	2019 2020**	2020- 2021**
Percent of Residents of Patients with Pressure Ulcers That are New or Worsened (Short Stay)(NQF #0678)(CMS ID:- L001.02)⁸	Existing	—	—	—
Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)	—	New	Existing	Existing
Application of Percent of Residents Experiencing One or More Falls with Major Injury (Long Stay) (NQF 0674) (CMS ID: L012.01)	Existing	Existing	Existing	Existing
Long-Term Care Hospital (LTCH) Functional Outcome Measure: Change in Mobility Among Patients Requiring Ventilator Support (NQF #2632) (CMS ID: L011.04)	Existing	Existing	Existing	Existing
Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631) (CMS ID: L009.02)	Existing	Existing	Existing	Existing
Application of Percent of Long-Term Care Hospital (LTCH) Patients With an Admission and Discharge Functional Assessment and a Care Plan That Addresses Function (NQF #2631) (CMS ID: L010.02)	Existing	Existing	Existing	Existing
Drug Regimen Review Conducted with Follow-Up for Identified Issues – PAC LTCH QRP (CMS ID: L020.01)	—	New	Existing	Existing
Compliance with Spontaneous Breathing Trial (SBT) by Day 2 of the LTCH Stay (CMS ID: L022.01)	—	New	Existing	Existing
Ventilator Liberation Rate (CMS ID: L023.01)	—	New	Existing	Existing

****Note that the measure user type years in the header have been updated. Updated header text in this table is kept as white text, rather than red, to ensure sufficient contrast ratios between the text and background for 508-compliance purposes.**

Example of quarterly rates included in the iQIES Review and Correct Reports for an existing measure: If the requested calendar year quarter end date is Quarter 1, 2020 (end date of March 31st), the four quarters of data that will be provided in this request will include the

⁸ Please refer to Chapter 6, Section 6.1.A on the effective date for data collection and implementation date for the iQIES reports.

Table 5-5

iQIES Review and Correct Reports: Change in Mobility Data Included in the Cumulative Rate (24-months) for Each Requested Quarter End Date^a

Requested Calendar Year Quarter End Date ^b	Data Included in the Cumulative Rate
Quarter 1, 2019	Quarter 2, 2017 through Quarter 1, 2019
Quarter 2, 2019	Quarter 3, 2017 through Quarter 2, 2019
Quarter 3, 2019	Quarter 4, 2017 through Quarter 3, 2019
Quarter 4, 2019	Quarter 1, 2018 through Quarter 4, 2019
Quarter 1, 2020	Quarter 2, 2018 through Quarter 1, 2020
Quarter 2, 2020	Quarter 3, 2018 through Quarter 2, 2020
Quarter 3, 2020	Quarter 4, 2018 through Quarter 3, 2020
Quarter 4, 2020	Quarter 1, 2019 through Quarter 4, 2020
Quarter 1, 2021	Quarter 2, 2019 through Quarter 1, 2021
Quarter 2, 2021	Quarter 3, 2019 through Quarter 2, 2021
Quarter 3, 2021	Quarter 4, 2019 through Quarter 3, 2021
Quarter 4, 2021	Quarter 1, 2020 through Quarter 4, 2021

^a See [Table 5-1](#) for discharge dates included for each quarter and [Table 5-2](#) to determine the measure type for each quality measure.

^b YYYY = User-Requested Year

Table 5-7

**iQIES QM Reports: Change in Mobility Data Included in the Cumulative Rate (24 months)
for Each Requested Report End Date**

Requested Report End Date^a	iQIES QM Report Calculation Month	Data Included in the Requested Report End Date
03/31/2019 (Quarter 1, 2019)	February 2019	April 1, 2017 through January 31, 2019
	March 2019	April 1, 2017 through February 28, 2019
	April 2019	April 1, 2017 through March 31, 2019
06/30/2019 (Quarter 2, 2019)	May 2019	July 1, 2016 through April 30, 2019
	June 2019	July 1, 2017 through May 31, 2019
	July 2019	July 1, 2017 through June 30, 2019
09/30/2019 (Quarter 2, 2019)	August 2019	October 1, 2017 through July 31, 2019
	September 2019	October 1, 2017 through August 31, 2019
	October 2019	October 1, 2017 through September 30, 2019
12/31/2019 (Quarter 4, 2019)	November 2019	January 1, 2018 through October 31, 2019
	December 2019	January 1, 2018 through November 30, 2019
	January 2020	January 1, 2018 through December 31, 2019
03/31/2020 (Quarter 1, 2020)	February 2020	April 1, 2018 through January 31, 2020
	March 2020	April 1, 2018 through February 28, 2020
	April 2020	April 1, 2018 through March 31, 2020
06/30/2020 (Quarter 2, 2020)	May 2020	July 1, 2018 through April 30, 2020
	June 2020	July 1, 2018 through May 31, 2020
	July 2020	July 1, 2018 through June 30, 2020
09/30/2020 (Quarter 3, 2020)	August 2020	October 1, 2018 through July 31, 2020
	September 2020	October 1, 2018 through August 31, 2020
	October 2020	October 1, 2018 through September 30, 2020
12/31/2020 (Quarter 4, 2020)	November 2020	January 1, 2019 through October 31, 2020
	December 2020	January 1, 2019 through November 30, 2020
	January 2021	January 1, 2019 through December 31, 2020

(continued)

Table 5-7 (continued)

**iQIES QM Reports: Change in Mobility Data Included in the Cumulative Rate (24 months)
for Each Requested Report End Date**

Requested Report End Date^a	iQIES QM Report Calculation Month	Data Included in the Requested Report End Date
03/31/2021 (Quarter 1, 2021)	February 2021	April 1, 2019 through January 31, 2021
	March 2021	April 1, 2019 through February 28, 2021
	April 2021	April 1, 2019 through March 31, 2021
06/30/2021 (Quarter 2, 2021)	May 2021	July 1, 2019 through April 30, 2021
	June 2021	July 1, 2019 through May 31, 2021
	July 2021	July 1, 2019 through June 30, 2021
09/30/2021 (Quarter 3, 2021)	August 2021	October 1, 2019 through July 31, 2021
	September 2021	October 1, 2019 through August 31, 2021
	October 2021	October 1, 2019 through September 30, 2021
12/31/2021 (Quarter 4, 2021)	November 2021	January 1, 2020 through October 31, 2021
	December 2021	January 1, 2020 through November 30, 2021
	January 2022	January 1, 2020 through December 31, 2021

^a YYYY = User-Requested Year

iQIES OM Report Measure Calculations for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury (CMS ID: L021.01)

This measure is risk-adjusted for the iQIES QM Reports and therefore an observed (i.e., not risk-adjusted) and a risk-adjusted value are reported. Using the definitions in [Table 7-2](#), the following steps are used to calculate the measure.

1. **Calculate the facility-level observed score** (steps 1.1 through 1.2).
 - 1.1 To calculate the facility-level observed score, complete steps 1 – 4 from **Chapter 6, Section 6.2**, “iQIES Review and Correct Report Measure Calculations” for Changes in Skin Integrity Post-Acute Care: Pressure Ulcer/Injury.
 - 1.2 Do not **e** round to the nearest first decimal place. All rounding will be done at the end of the measure calculation.
2. **Calculate the national average observed score**¹³ (steps 2.1 through 2.3).
 - 2.1 After excluding patient stays based on the criteria listed in [Table 7-2](#), these patient stays become the denominator for the national average observed score.
 - 2.2 Identify patient stays in the denominator of the national average observed score with pressure ulcers that are new or worsened based on the criteria in [Table 7-2](#). These records comprise the numerator of the national average observed score.
 - 2.3 Divide the numerator (2.2) by the denominator (2.1) to calculate the national average observed score.

Note: Because there is limited public accessibility to national assessment data, this document provides a national average observed score based on the reporting period of the regression intercept and coefficients. The national average observed score can be found in the Risk-Adjustment Appendix File. Please note that, depending on the reporting period and time of calculation, the national average observed score used in the iQIES QM Report, Provider Preview Report, and on public display on the Compare Website may vary from the national average observed score provided by these documents.

3. **Calculate the facility-level expected score for each patient** (steps 3.1 through 3.3).
 - 3.1 Determine presence or absence of the pressure ulcer covariates for each patient.
 - 3.2 Using the covariate definitions in [Table 7-2](#), assign covariate values (COV), either ‘0’ for covariate condition not present or ‘1’ for covariate condition present, for each patient for each of the four covariates as reported on the admission assessment.
 - 3.3 Calculate the expected score for each patient using the following formula:

$$[1] \text{ Patient – level expected score} = \frac{1}{[1 + e^{-x}]}$$

Where:

- *e* is the base of natural logarithms

¹³The national average observed score is calculated using the patient stay as the unit of analysis.

- X is a linear combination of the constant and the logistic regression coefficients times the covariate scores (from Formula [2], below):

$$[2] X = \beta_0 + \beta_1(COV_1) + \beta_2(COV_2) + \beta_3(COV_3) + \beta_4(COV_4)$$

$$[3] \text{Probability}(Y = 1) = \text{Logit}(X)$$

Where:

- Y identifies if patient is part of the numerator count (i.e., triggering the quality measure: 1 = yes, 0 = no).
- β_0 is the logistic regression constant or intercept.
- β_1 is the logistic regression coefficient for the first covariate “functional limitation” and COV_1 is the patient-level covariate value.
- β_2 is the logistic regression coefficient for the second covariate “bowel incontinence,” and COV_2 is the patient level covariate value.
- β_3 is the logistic regression coefficient for the third covariate “diabetes or peripheral vascular disease/peripheral artery disease (PVD/PAD)” and COV_3 is the patient-level covariate value.
- β_4 is the logistic regression coefficient for the fourth covariate “low body mass index (BMI)” and COV_4 is the patient-level covariate value.

See **Appendix A, Table A-3** and the associated Risk-Adjustment Appendix File for the regression constant and coefficients.¹⁴ The regression constant and coefficients are values obtained through statistical logistic regression analysis. Please note that the iQIES QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in **Table A-3** and the Risk-Adjustment Appendix File.

4. Calculate the mean facility-level expected score (step 4.1).

- 4.1 Once patient-level expected scores have been calculated, calculate the mean facility-level expected quality measure score as the mean of the facility’s patient-level expected scores.

5. Calculate the facility-level risk-adjusted score (steps 5.1 through 5.3).

- 5.1 Calculate the facility-level risk-adjusted score based on the:

- Facility-level observed quality measure score (steps 1.1 through 1.2)
- Mean facility-level expected quality measure score (step 4.1)
- National average observed quality measure score (steps 2.1 through 2.3)
- The calculation of the risk-adjusted score uses the following equation:

¹⁴ The regression constant (intercept) and coefficient values have been rounded to four decimal places. When applying these values to the equation to calculate facility-level QM scores, these intercept and coefficient values should be used; do not round to fewer than four decimal places. This is to ensure consistency and accuracy of measure calculations.

Section 6.9: Ventilator Liberation Rate (CMS ID: L023.01)

iQIES Review and Correct Report Measure Calculations for Ventilator Liberation Rate (CMS ID: L023.01)

For the Review and Correct Reports, only the facility-level observed score is computed. Using the definitions in [Table 7-9](#), the following steps are used to calculate the measure.

1. **Identify excluded patient stays** (steps 1.1 through 1.3).
 - 1.1 Patient stay is excluded if it is missing data to calculate the measure (O0150A = [-]).
 - 1.2 Patient stay is excluded if patient was not on invasive mechanical ventilation support upon admission to the LTCH (O0150A = [0]).
 - 1.3 Patient stay is excluded if, of patients admitted to the LTCH during the reporting period who were on invasive mechanical ventilation support upon admission to the LTCH, and weaning attempts are not expected or anticipated at admission (O0150A = [2]).
2. **Determine the facility-level denominator count.** Determine the total number of stays for which the LTCH admission assessment indicates that weaning attempts are expected or anticipated (O0150A = [1]).
3. **Determine the facility-level numerator count.** Determine the total number of stays for which the LTCH planned or unplanned discharge assessment indicates the patient is alive and fully liberated (weaned), (O0200A = [1]).
4. **Calculate the facility-level observed score.** Divide the facility's numerator count by its denominator count to obtain the facility-level observed score; that is, divide the result of step 3 by the result of step 2.
5. **Calculate the rounded percent value** (steps 5.1 through 5.3).
 - 5.1 Multiply the facility-level observed score by 100 to obtain a percent value.
 - 5.2 If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged.
 - 5.3 Drop all of the digits following the first decimal place.

iQIES OM Report Measure Calculations for Ventilator Liberation Rate (CMS ID: L023.01)

This measure is risk-adjusted for the iQIES QM Reports and therefore an observed (i.e., not risk-adjusted) and a risk-adjusted value are reported. Using the definitions in [Table 7-9](#), the following steps are used to calculate the measure.

1. **Calculate the facility-level observed score** (steps 1.1 through 1.2).
 - 1.1 To calculate the facility-level observed score, complete steps 1 – 4 from **Chapter 6, Section 6.9**, “iQIES Review and Correct Report Measure Calculations” for this measure.
 - 1.2 Do not multiply by 100 or round to the nearest first decimal place. All rounding will be done at the end of the measure calculation.

2. **Calculate the national average observed score**¹⁷ as the mean ventilator liberation rate for all patient stays calculated using steps 1 – 3 from **Chapter 6, Section 6.9**. This will be used in step 6 to calculate the facility-level risk-adjusted ventilator liberation rate.

Note: Because there is limited public accessibility to national assessment data, this document provides a national average observed score based on the reporting period of the regression intercept and coefficients. The national average observed score can be seen in the Risk-Adjustment Appendix File. Please note that, depending on the reporting period and time of calculation, the national average observed score used in the iQIES QM Report, Provider Preview Report, and on public display on the Compare Website may vary from the national average observed score provided by these documents.

3. **Calculate the facility-level predicted ventilator liberation rate** (steps 3.1 through 3.4).

- 3.1 Determine the presence or absence of the measure covariates for each patient.
- 3.2 Using the covariate definitions in [Table 7-9](#), assign covariate values (COV), either ‘0’ for covariate condition not present or ‘1’ for covariate condition present, for each patient for each of the covariates as reported on the admission assessment.
- 3.3 Calculate the predicted score for each patient using the following formula:

$$[1] \text{ Predicted score} = \frac{1}{[1+e^{-X}]}$$

Where:

- **Predicted score** identifies the predicted probability of ventilator liberation for each patient
- **e** is the base of natural logarithms
- **X** is calculated as follows:

$$[2] X = \alpha + \beta_1(\text{COV}_1) + \dots + \beta_n(\text{COV}_n)$$

$$[3] \alpha = \gamma + \mu$$

Where:

- **α** is the LTCH-specific regression constant or intercept
- **β₁ through β_n** are the regression coefficients for the covariates (see Risk-Adjustment Appendix File).
- **γ** is the adjusted average ventilator liberation rate across all LTCHs (see Risk-Adjustment Appendix File)
- **μ** is the LTCH-specific random effect (unique increment to the intercept associated with the LTCH; see Risk-Adjustment Appendix File)

¹⁷ The national average observed score is calculated using the patient stay as the unit of analysis.

See **Appendix A, [Table A-5](#)** and the associated Risk-Adjustment Appendix File for the regression constant and coefficients as well as detailed LTCH CARE Data Set coding for each covariate, ~~and see **Appendix A, [Table A-7](#)** and the associated Risk-Adjustment Appendix File for the list of intercepts associated with each LTCH.~~¹⁸ The regression constant, regression coefficients, and LTCH-specific intercepts are values obtained through hierarchical logistic regression analysis. Please note that the iQIES QM and Provider Preview Reports use fixed regression constants and coefficients based on the target period stated in **[Table A-5, \[Table A-7\]\(#\)](#)**, and the associated Risk-Adjustment Appendix File.

3.4 Calculate the predicted ventilator liberation rate (pred_j) for each LTCH as the mean of the predicted score for all patients in the facility.

4. Calculate the facility-level expected ventilator liberation rate (steps 4.1 through 4.4).

4.1 Determine the presence or absence of the measure covariates for each patient.

4.2 Using the covariate definitions in **[Table 7-9](#)**, assign covariate values (COV), either ‘0’ for covariate condition not present or ‘1’ for covariate condition present, for each patient for each of the covariates as reported on the admission assessment.

4.3 Calculate the expected score for each patient using the following formula:

$$[4] \text{ Expected score} = \frac{1}{[1 + e^{-Y}]}$$

Where:

- *Expected score* identifies the expected liberation probability of ventilator liberation for each patient
- *e* is the base of natural logarithms
- *Y* is calculated as follows:

$$[5] Y = \beta_0 + \beta_1(\text{COV}_1) + \dots + \beta_n(\text{COV}_n)$$

Where:

- β_0 is the logistic regression constant or intercept
- β_1 through β_n are the regression coefficients for the covariates (see Risk-Adjustment Appendix File).

See **Appendix A, [Table A-6](#)** and the associated Risk-Adjustment Appendix File for the regression constant and coefficients as well as detailed LTCH CARE Data Set coding for each risk adjustor.¹⁹ The regression constant and regression coefficients are values obtained through logistic regression analysis. Please note that the iQIES QM and Provider Preview Reports use fixed regression constants and coefficients based on the

^{18, 19} The regression constant (intercept) and coefficient values have been rounded to four decimal places. When applying these values to the equation to calculate facility-level QM scores, these intercept and coefficient values should be used; do not round to fewer than four decimal places. This is to ensure consistency and accuracy of measure calculations.

target period stated in [Table A-6](#) and the associated Risk-Adjustment Appendix File.

4.4 Calculate the expected ventilator liberation rate (exp_j) for each LTCH as the mean of the expected score for all patients in the facility.

5. **Calculate the facility-level standardized risk ratio.** Calculate the facility-level standardized risk ratio (SRR_j) using the following equation:

$$SRR_j = \frac{pred_j}{exp_j}$$

Where:

- $pred_j$ = the predicted ventilator liberation rate for each LTCH, as calculated in step 3
- exp_j = the expected ventilator liberation rate for each LTCH, as calculated in step 4

6. **Calculate the LTCH risk-adjusted ventilator liberation rate.** Calculate the LTCH risk-adjusted ventilator liberation rate by multiplying the facility-level standardized risk ratio (step 5) by the national average observed score (step 2).

7. **Calculate the rounded percent value** (steps 7.1 through 7.3).

7.1 Multiply the LTCH risk-adjusted ventilator liberation rate by 100 to obtain a percent value.

7.2 If the digit in the second decimal place is 5 or greater, add 1 to the first decimal place, otherwise leave the first decimal place unchanged.

Drop all of the digits following the first decimal place.

National Average Calculation for Ventilator Liberation Rate (CMS ID: L023.01)

To calculate the patient stay-level (i.e. prevalence) national average, refer to Step 2 under the CASPER QM Report Measure Calculations for this measure.