



## Measure Information

This document contains the information submitted by measure developers/stewards, but is organized according to NQF's measure evaluation criteria and process. The item numbers refer to those in the submission form but may be in a slightly different order here. In general, the item numbers also reference the related criteria (e.g., item 1b.1 relates to subcriterion 1b).

### Brief Measure Information

**NQF #:** 0327

**De.2. Measure Title:** Risk-Adjusted Average Length of Inpatient Hospital Stay

**Co.1.1. Measure Steward:** Premier, Inc

**De.3. Brief Description of Measure:** The average (geometric mean) hospital length of stay in days relative to the expected geometric mean length of stay of any well defined population of inpatients over a specified time interval

**1b.1. Developer Rationale:** Length of stay is among the most popular outcome measures for hospitals engaging in performance improvement. Easily observed and measured, length of stay is less controversial and less emotionally charged than many outcome measures, making it an ideal choice for efforts requiring staff buy-in. Additionally, length of stay is more easily addressable and actionable than many other outcomes, further enhancing its attractiveness for performance improvement.

As an outcome measure, length of stay serves as a proxy for resource usage, reflecting how efficiently a hospital allocates staff time, space, equipment, and additional considerations per patient. Accordingly, it correlates highly with cost. In addition to these economic factors, length of stay holds implications for hospital quality. 1 The longer a patient remains in hospital the longer is his exposure to various inpatient risks such as medication errors and hospital infections. Longer lengths of stay can also contribute to hospital congestion that can affect efficiency and in turn quality.

**S.4. Numerator Statement:** Risk-adjusted in-hospital days average for any defined and observable inpatient population in the form of days above the average that would be expected purely based on patient risk factors of the defined patient population

**S.7. Denominator Statement:** Patients admitted to a hospital. Patient population can be aggregated as any grouping of patients (e.g., by hospital, physician, diagnosis code, procedure, DRG, etc.)

**S.10. Denominator Exclusions:** The only exclusions are those limited by the parameters set for a specific population and are not limited by diagnosis

**De.1. Measure Type:** Outcome

**S.23. Data Source:** Administrative claims

**S.26. Level of Analysis:** Facility

**IF Endorsement Maintenance – Original Endorsement Date:** May 15, 2008 **Most Recent Endorsement Date:** May 15, 2008

**IF this measure is included in a composite, NQF Composite#/title:**

**IF this measure is paired/grouped, NQF#/title:**

**De.4. IF PAIRED/GROUPED, what is the reason this measure must be reported with other measures to appropriately interpret results?** Can be paired with hospital readmissions, since one way to reduce readmissions is to keep patients in the hospital longer.

### 1. Evidence, Performance Gap, Priority – Importance to Measure and Report

Extent to which the specific measure focus is evidence-based, important to making significant gains in healthcare quality, and improving health outcomes for a specific high-priority (high-impact) aspect of healthcare where there is variation in or overall less-than-optimal performance. **Measures must be judged to meet all subcriteria to pass this criterion and be evaluated against the remaining criteria.**

**1a. Evidence to Support the Measure Focus – See attached Evidence Submission Form**  
0327\_Evidence\_MSF5.0\_Data-635294587688776248.docx

**1b. Performance Gap**

Demonstration of quality problems and opportunity for improvement, i.e., data demonstrating:

- considerable variation, or overall less-than-optimal performance, in the quality of care across providers; and/or
- disparities in care across population groups.

**1b.1. Briefly explain the rationale for this measure** (e.g., the benefits or improvements in quality envisioned by use of this measure)

Length of stay is among the most popular outcome measures for hospitals engaging in performance improvement. Easily observed and measured, length of stay is less controversial and less emotionally charged than many outcome measures, making it an ideal choice for efforts requiring staff buy-in. Additionally, length of stay is more easily addressable and actionable than many other outcomes, further enhancing its attractiveness for performance improvement.

As an outcome measure, length of stay serves as a proxy for resource usage, reflecting how efficiently a hospital allocates staff time, space, equipment, and additional considerations per patient. Accordingly, it correlates highly with cost. In addition to these economic factors, length of stay holds implications for hospital quality. 1 The longer a patient remains in hospital the longer is his exposure to various inpatient risks such as medication errors and hospital infections. Longer lengths of stay can also contribute to hospital congestion that can affect efficiency and in turn quality.

**1b.2. Provide performance scores on the measure as specified (current and over time) at the specified level of analysis.** (This is required for endorsement maintenance. Include mean, std dev, min, max, interquartile range, scores by decile. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities included). This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.

The following descriptive statistics are at the hospital Level for ALOS where N = 709 hospitals over the 2-year period July 2010 to June 2012.

ALOS O/E ratios:

#### Moments

N	709	Sum Weights	709
Mean	0.9890249	Sum Observations	701.218651
Std Deviation	0.1074782	Variance	0.01155156
Skewness	1.44123195	Kurtosis	8.02505007

#### Distribution across the sample

##### Quantile Estimate

100% Max	1.832641
99%	1.294724
95%	1.156002
90%	1.108581
75% Q3	1.046897
50% Median	0.980003
25% Q1	0.924041
10%	0.866123
5%	0.835259
1%	0.767335
0% Min	0.710107

#### Risk-Adjusted ALOS at the hospital level

#### Moments

N	709	Sum Weights	709
Mean	3.01064605	Sum Observations	2134.54805
Std Deviation	0.37484182	Variance	0.14050639
Skewness	3.44096562	Kurtosis	30.2486973

## Distribution of Risk-Adjusted ALOS

Quantile	Estimate
100% Max	6.80172
99%	4.17271
95%	3.50245
90%	3.35310
75% Q3	3.17578
50% Median	2.97622
25% Q1	2.80538
10%	2.64475
5%	2.54391
1%	2.28004
0% Min	2.10308

## Trends over time:

Year	Num_Hosp	Cases	ALOS_obs	LOS_exp	O/E Ratio	O-E Deviation
2006	374	5,001,704	3.2	3.1	1.01	0.03
2007	373	5,088,472	3.1	3.2	1.00	-0.01
2008	456	6,183,303	3.1	3.2	0.97	-0.09
2009	505	6,841,630	3.1	3.3	0.95	-0.18
2010	614	7,764,322	3.1	3.3	0.94	-0.20
2011	689	8,364,945	3.1	3.2	0.97	-0.10
2012	729	8,738,990	3.1	3.1	0.99	-0.02
2013	714	7,682,240	3.1	3.1	1.00	0.00
2014	64	40,594	3.1	3.1	1.01	0.02

**1b.3. If no or limited performance data on the measure as specified is reported in 1b2, then provide a summary of data from the literature that indicates opportunity for improvement or overall less than optimal performance on the specific focus of measurement.**

NA

**1b.4. Provide disparities data from the measure as specified (current and over time) by population group, e.g., by race/ethnicity, gender, age, insurance status, socioeconomic status, and/or disability. (This is required for endorsement maintenance. Describe the data source including number of measured entities; number of patients; dates of data; if a sample, characteristics of the entities include.) This information also will be used to address the subcriterion on improvement (4b.1) under Usability and Use.**

Mean LOS by socioeconomic class:

The most significant variation is for age class (<18), payer class (especially commercial and self pay, and income class. The general variation of risk-adjusted ALOS is low across these categories largely because they are used as patient-level risk factors in order to identify provider (hospital) common cause effects.

age	cases	avg_los
Age18-65	8,802,037	3.035
Age65+	6,200,395	3.037
Age<18	2,579,084	3.055

sex	cases	avg_los
Female	10,236,394	3.038
Male	7,342,433	3.039

race	cases	avg_los
1-white	11,615,408	3.0383
2-black	2,502,222	3.0388
3-asian	470,029	3.0396
4-other	2,993,855	3.0391

payer	cases	avg_los
Commercial	8,727,648	3.036244
Medicaid	1,973,133	3.039316
Medicare	5,587,305	3.036926
Selfpay	1,293,430	3.059967

Income class	cases	avg_los
Top quartile	4,399,587	3.0522
Bottom quartile	4,385,691	3.0664
Inter quartile	8,796,238	3.0179

age	ln_los_dev LSMEAN	LSMEAN Number
Age18-65	-0.00059960	1
Age65+	-0.00007495	2
Age<18	0.00599130	3

p-values for age category effects – marginally significant for adults under 65 versus above 65 and highly significant for juveniles against adults:

i/j	1	2	3
Age18-65 1		0.0702	<.0001
Age65+ 2	0.0702		<.0001
Age<18 3	<.0001	<.0001	

No significant effects of race categories on ALOS (risk deviation).

Significant effects of payer category as follows:

payer	ln_los_dev LSMEAN	LSMEAN Number
Commercial	-0.00020513	1
Medicaid	0.00080594	2
Medicare	0.00001941	3
Selfpay	0.00757777	4

p-values for ALOS (risk deviation) effects across payer categories as follows:

i/j	1	2	3	4
1		0.0203	0.4534	<.0001
2	0.0203		0.0857	<.0001
3	0.4534	0.0857		<.0001
4	<.0001	<.0001	<.0001	

No significant effect for Medicare against commercial, marginal significant effect for Medicare against Medicaid, highly significant effect for selfpay against all others, and significant effect for Medicaid against commercial.

Significant effects of income categories as follows:

income class	ln_los_dev LSMEAN	LSMEAN Number
Top quartile	0.00505034	1
Bottom quartile	0.00968719	2
Inter quartile	-0.00625208	3

Significant effect of across all three income categories, as shown by the following p-values:

i/j	1	2	3
1		<.0001	<.0001
2	<.0001		<.0001
3	<.0001	<.0001	

**1b.5. If no or limited data on disparities from the measure as specified is reported in 1b4, then provide a summary of data from the literature that addresses disparities in care on the specific focus of measurement. Include citations.**

NA

**1c. High Priority** (previously referred to as High Impact)

The measure addresses:

- a specific national health goal/priority identified by DHHS or the National Priorities Partnership convened by NQF; OR
- a demonstrated high-priority (high-impact) aspect of healthcare (e.g., affects large numbers of patients and/or has a substantial impact for a smaller population; leading cause of morbidity/mortality; high resource use (current and/or future); severity of illness; and severity of patient/societal consequences of poor quality).

**1c.1. Demonstrated high priority aspect of healthcare**

Affects large numbers, High resource use

**1c.2. If Other:**

**1c.3. Provide epidemiologic or resource use data that demonstrates the measure addresses a high priority aspect of healthcare.**

List citations in 1c.4.

See updated overview document under S.1.

Also on AHRQ web site: Kroch, Eugene A., and Michael Duan. "Agency for Healthcare Research and Quality." CareScience Risk Assessment Model: Hospital Performance Measurement. n.d. <http://www.ahrq.gov/qual/mortality/KrochRisk.htm>.

**1c.4. Citations for data demonstrating high priority provided in 1a.3**

See updated overview document under S.1.

Also on AHRQ web site: Kroch, Eugene A., and Michael Duan. "Agency for Healthcare Research and Quality." CareScience Risk Assessment Model: Hospital Performance Measurement. n.d. <http://www.ahrq.gov/qual/mortality/KrochRisk.htm>.

**1c.5. If a PRO-PM (e.g. HRQoL/functional status, symptom/burden, experience with care, health-related behaviors), provide evidence that the target population values the measured PRO and finds it meaningful. (Describe how and from whom their input**

was obtained.)

NA

## 2. Reliability and Validity—Scientific Acceptability of Measure Properties

Extent to which the measure, as specified, produces consistent (reliable) and credible (valid) results about the quality of care when implemented. **Measures must be judged to meet the subcriteria for both reliability and validity to pass this criterion and be evaluated against the remaining criteria.**

**2a.1. Specifications** The measure is well defined and precisely specified so it can be implemented consistently within and across organizations and allows for comparability. eMeasures should be specified in the Health Quality Measures Format (HQMF) and the Quality Data Model (QDM).

**De.5. Subject/Topic Area** (check all the areas that apply):

Behavioral Health, Cancer, Cardiovascular, Endocrine, Gastrointestinal (GI), GU/GYN, Head, Eyes, Ears, Nose, Throat (HEENT), Infectious Diseases, Mental Health, Musculoskeletal, Neurology, Perinatal and Reproductive Health, Pulmonary/Critical Care, Renal, Surgery

**De.6. Cross Cutting Areas** (check all the areas that apply):

Access, Care Coordination, Disparities, Overuse, Patient and Family Engagement, Safety : Readmissions

**S.1. Measure-specific Web Page** (Provide a URL link to a web page specific for this measure that contains current detailed specifications including code lists, risk model details, and supplemental materials. Do not enter a URL linking to a home page or to general information.)

<https://www.premierinc.com/wps/wcm/connect/e468c44e-8229-4a31-8660-efbc0b46164e/Premier+LOS+overview-28Feb14.pdf?MOD=AJPERES>

**S.2a. If this is an eMeasure**, HQMF specifications must be attached. Attach the output from the eMeasure authoring tool (MAT) - if the MAT was not used, contact staff. (Use the specification fields in this online form for the plain-language description of the specifications)

**Attachment:**

**S.2b. Data Dictionary, Code Table, or Value Sets** (and risk model codes and coefficients when applicable) must be attached. (Excel or csv file in the suggested format preferred - if not, contact staff)

**Attachment Attachment:** [PremierLOS\\_Risk\\_Model\\_Details-Coeffs-Strata-Codes\\_Jun2013.xlsx](#)

**S.3. For endorsement maintenance**, please briefly describe any changes to the measure specifications since last endorsement date and explain the reasons.

Two kinds of changes: (1) annual recalibration of the model using the Premier data base of hospital discharges, which of is updated continuously, and (2) changes in the risk model specifications, as detailed in the attached document. The most recent changes to the specifications has been to refine the comorbidity severity scoring, using both clinical judgment and statistical analysis and exploiting more accurate POA information.

**S.4. Numerator Statement** (Brief, narrative description of the measure focus or what is being measured about the target population, i.e., cases from the target population with the target process, condition, event, or outcome)

IF an OUTCOME MEASURE, state the outcome being measured. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.

Risk-adjusted in-hospital days average for any defined and observable inpatient population in the form of days above the average that would be expected purely based on patient risk factors of the defined patient population

**S.5. Time Period for Data** (What is the time period in which data will be aggregated for the measure, e.g., 12 mo, 3 years, look back to August for flu vaccination? Note if there are different time periods for the numerator and denominator.)

Any observable time period with at least 30 observations (discharges).

**S.6. Numerator Details** (All information required to identify and calculate the cases from the target population with the target process, condition, event, or outcome such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

*IF an OUTCOME MEASURE, describe how the observed outcome is identified/counted. Calculation of the risk-adjusted outcome should be described in the calculation algorithm.*

The observed outcome is each patient's number of days of hospitalization. Same day discharges are counted as 1-day stays.

**S.7. Denominator Statement** (Brief, narrative description of the target population being measured)

Patients admitted to a hospital. Patient population can be aggregated as any grouping of patients (e.g., by hospital, physician, diagnosis code, procedure, DRG, etc.)

**S.8. Target Population Category** (Check all the populations for which the measure is specified and tested if any):

Populations at Risk, Populations at Risk : Individuals with multiple chronic conditions, Senior Care

**S.9. Denominator Details** (All information required to identify and calculate the target population/denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

The target population is any observable subset of patients admitted to a hospital. Patient population can be identified as any grouping of patients (e.g., by hospital, physician, diagnosis code, procedure, DRG, etc.)

**S.10. Denominator Exclusions** (Brief narrative description of exclusions from the target population)

The only exclusions are those limited by the parameters set for a specific population and are not limited by diagnosis

**S.11. Denominator Exclusion Details** (All information required to identify and calculate exclusions from the denominator such as definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format at S.2b)

No exclusions except patients with no diagnosis code or for whom the LOS cannot be determined.

**S.12. Stratification Details/Variables** (All information required to stratify the measure results including the stratification variables, definitions, specific data collection items/responses, code/value sets – Note: lists of individual codes with descriptors that exceed 1 page should be provided in an Excel or csv file in required format with at S.2b)

Stratified by principal diagnosis code, usually at the 3-digit level. Details of each of the 142 strata are found in the attached documentation of the risk model. See S.2b.

**S.13. Risk Adjustment Type** (Select type. Provide specifications for risk stratification in S.12 and for statistical model in S.14-15)

Statistical risk model

If other:

**S.14. Identify the statistical risk model method and variables** (Name the statistical method - e.g., logistic regression and list all the risk factor variables. Note - risk model development and testing should be addressed with measure testing under Scientific Acceptability)

As per the developer, to ensure that results are robust and represent the true patient population with the specified disease, the CareScience ALOS measure accounts for areas affecting the LOS by including risk factors and their interactions rather than using numerator/denominator exclusion criteria. As such, the following variables are incorporated into the risk adjustment methodology: age, sex, race, income, distance traveled, principle diagnosis, comorbidity severity score, payer class, admission type (e.g., emergency, elective), admission source (e.g., transfer, physician referral), chronic disease and disease history, discharge disposition (e.g., home, skilled nursing facility), time trend factor for cost (to control for inflation specific to each disease); and where applicable, birth weight, cancer status, valid procedure codes, and defining diagnosis (three-digit ICD-9 code for neonates). See overview document posted on web site.

**S.15. Detailed risk model specifications** (must be in attached data dictionary/code list Excel or csv file. Also indicate if available at measure-specific URL identified in S.1.)

Note: Risk model details (including coefficients, equations, codes with descriptors, definitions), should be provided on a separate worksheet in the suggested format in the Excel or csv file with data dictionary/code lists at S.2b.

Available in attached Excel or csv file at S.2b

**S.15a. Detailed risk model specifications** (if not provided in excel or csv file at S.2b)

Provided in overview document under S.1 and in Excel file attached under S.2b, which contains all of the risk model details. Provided

**S.16. Type of score:**

Continuous variable, e.g. average

If other:

**S.17. Interpretation of Score** (Classifies interpretation of score according to whether better quality is associated with a higher score, a lower score, a score falling within a defined interval, or a passing score)

Better quality = Lower score

**S.18. Calculation Algorithm/Measure Logic** (Describe the calculation of the measure score as an ordered sequence of steps including identifying the target population; exclusions; cases meeting the target process, condition, event, or outcome; aggregating data; risk adjustment; etc.)

See updated overview document on web site provided provided under S.1.

**S.19. Calculation Algorithm/Measure Logic Diagram URL or Attachment** (You also may provide a diagram of the Calculation Algorithm/Measure Logic described above at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available at measure-specific web page URL identified in S.1

**S.20. Sampling** (If measure is based on a sample, provide instructions for obtaining the sample and guidance on minimum sample size.)

IF a PRO-PM, identify whether (and how) proxy responses are allowed.

Based on all observed discharges that include a principal diagnosis code and a way to observe the number of days in the hospital (discharge date - admission date). No proxies are used.

**S.21. Survey/Patient-reported data** (If measure is based on a survey, provide instructions for conducting the survey and guidance on minimum response rate.)

IF a PRO-PM, specify calculation of response rates to be reported with performance measure results.

NA

**S.22. Missing data** (specify how missing data are handled, e.g., imputation, delete case.)

Required for Composites and PRO-PMs.

Incomplete observations are still included as long as they have a principal diagnosis and way to compute the LOS. In such cases the LOS risk model degenerates to the mean value of the diagnosis grouping, which cab be compared to the observed LOS.

**S.23. Data Source** (Check ONLY the sources for which the measure is SPECIFIED AND TESTED).

If other, please describe in S.24.

Administrative claims

**S.24. Data Source or Collection Instrument** (Identify the specific data source/data collection instrument e.g. name of database, clinical registry, collection instrument, etc.)

IF a PRO-PM, identify the specific PROM(s); and standard methods, modes, and languages of administration.

The CareScience Analytics Methodology, as implemented, is made available through a back-end data processing service, whereby a member's claims-based data may be submitted into the service, with risk adjusted results being returned. In more technical terms, the data processing service is a Java-based API (Application Programming Interface) which can be called from various front-end or back-end systems. Technical documentation on how systems interact with this service is attached herein. While CSA is implemented as a back-end data processing service, the risk adjusted results are made available through two Premier applications (QualityAdvisor and PhysicianFocus) to allow detailed analysis by the end-user. The CSA data processing service can also be interacted with through SFTP (Secure File Transfer Protocol) whereby a member's delimited claims files may be submitted to a member-specific SFTP site, with risk-adjusted files being returned in the same location.

**S.25. Data Source or Collection Instrument** (available at measure-specific Web page URL identified in S.1 OR in attached appendix at A.1)

Available at measure-specific web page URL identified in S.1

**S.26. Level of Analysis** (Check ONLY the levels of analysis for which the measure is SPECIFIED AND TESTED)

Facility



**S.27. Care Setting** (Check *ONLY* the settings for which the measure is SPECIFIED AND TESTED)

Behavioral Health/Psychiatric : Inpatient, Hospital/Acute Care Facility, Post Acute/Long Term Care Facility : Inpatient Rehabilitation Facility, Post Acute/Long Term Care Facility : Long Term Acute Care Hospital, Post Acute/Long Term Care Facility : Nursing Home/Skilled Nursing Facility

If other:

**S.28. COMPOSITE Performance Measure** - Additional Specifications (Use this section as needed for aggregation and weighting rules, or calculation of individual performance measures if not individually endorsed.)

**2a. Reliability** – See attached Measure Testing Submission Form

**2b. Validity** – See attached Measure Testing Submission Form

0327\_MeasureTesting\_MS5.0\_Data-635294588805750568.docx

### 3. Feasibility

Extent to which the specifications including measure logic, require data that are readily available or could be captured without undue burden and can be implemented for performance measurement.

**3a. Byproduct of Care Processes**

For clinical measures, the required data elements are routinely generated and used during care delivery (e.g., blood pressure, lab test, diagnosis, medication order).

**3a.1. Data Elements Generated as Byproduct of Care Processes.**

Coded by someone other than person obtaining original information (e.g., DRG, ICD-9 codes on claims), Other

If other: LOS or date fields in the discharge abstract or claims form.

**3b. Electronic Sources**

The required data elements are available in electronic health records or other electronic sources. If the required data are not in electronic health records or existing electronic sources, a credible, near-term path to electronic collection is specified.

**3b.1. To what extent are the specified data elements available electronically in defined fields?** (i.e., data elements that are needed to compute the performance measure score are in defined, computer-readable fields)

ALL data elements are in defined fields in a combination of electronic sources

**3b.2. If ALL the data elements needed to compute the performance measure score are not from electronic sources, specify a credible, near-term path to electronic capture, OR provide a rationale for using other than electronic sources.**

**3b.3. If this is an eMeasure, provide a summary of the feasibility assessment in an attached file or make available at a measure-specific URL.**

Attachment:

**3c. Data Collection Strategy**

Demonstration that the data collection strategy (e.g., source, timing, frequency, sampling, patient confidentiality, costs associated with fees/licensing of proprietary measures) can be implemented (e.g., already in operational use, or testing demonstrates that it is ready to put into operational use). For eMeasures, a feasibility assessment addresses the data elements and measure logic and demonstrates the eMeasure can be implemented or feasibility concerns can be adequately addressed.

**3c.1. Describe what you have learned/modified as a result of testing and/or operational use of the measure regarding data collection, availability of data, missing data, timing and frequency of data collection, sampling, patient confidentiality, time and cost of data collection, other feasibility/implementation issues.**

**IF a PRO-PM**, consider implications for both individuals providing PROM data (patients, service recipients, respondents) and those whose performance is being measured.

From the beginning hospital claims are submitted into the service, with risk adjusted results being returned. In more technical terms, the data processing service is a Java-based API (Application Programming Interface) which can be called from various front-

end or back-end systems. Technical documentation on how systems interact with this service is attached herein. While CSA is implemented as a back-end data processing service, the risk adjusted results are made available through two Premier applications (QualityAdvisor and PhysicianFocus) to allow detailed analysis by the end-user. The CSA data processing service can also be interacted with through SFTP (Secure File Transfer Protocol) whereby a member's delimited claims files may be submitted to a member-specific SFTP site, with risk-adjusted files being returned in the same location. From the beginning hospital claims are submitted with dates of admission and discharge to compute inpatient LOS at the micro level. Where precise dates are suppressed to protect privacy, the patient level LOS (number of days) are provided along with the risk factors described under S.1 and listed in the detailed Excel attachment (of 1b.2), so that risk adjusted LOS can be computed and aggregated to the facility level. In more technical terms, the data processing service is a Java-based API (Application Programming Interface) which can be called from various front-end or back-end systems. Although the model is implemented as a back-end data processing service, the risk adjusted results are made available through a number of user applications that are designed to compute variation in risk-adjusted LOS over time and across categories of patients. The data processing service can also be interacted with through SFTP (Secure File Transfer Protocol) whereby a facility's delimited claims files may be submitted to a specific SFTP site, with risk-adjusted files being returned in the same location.

**3c.2. Describe any fees, licensing, or other requirements to use any aspect of the measure as specified (e.g., value/code set, risk model, programming code, algorithm).**

None

#### 4. Usability and Use

Extent to which potential audiences (e.g., consumers, purchasers, providers, policy makers) are using or could use performance results for both accountability and performance improvement to achieve the goal of high-quality, efficient healthcare for individuals or populations.

##### 4a. Accountability and Transparency

Performance results are used in at least one accountability application within three years after initial endorsement and are publicly reported within six years after initial endorsement (or the data on performance results are available). If not in use at the time of initial endorsement, then a credible plan for implementation within the specified timeframes is provided.

##### 4.1. Current and Planned Use

NQF-endorsed measures are expected to be used in at least one accountability application within 3 years and publicly reported within 6 years of initial endorsement in addition to performance improvement.

Planned	Current Use (for current use provide URL)
Public Reporting	<p>Quality Improvement with Benchmarking (external benchmarking to multiple organizations)</p> <p>Quality Advisor</p> <p>:</p> <p><a href="https://www.premierinc.com/wps/portal/premierinc/public/transforminghealthcare/improvingperformance/quality/qualityadvisor">https://www.premierinc.com/wps/portal/premierinc/public/transforminghealthcare/improvingperformance/quality/qualityadvisor</a></p> <p>Quality Improvement (Internal to the specific organization)</p> <p>See above</p> <p>See above</p>

##### 4a.1. For each CURRENT use, checked above, provide:

- Name of program and sponsor
- Purpose
- Geographic area and number and percentage of accountable entities and patients included

Premier Quality Advisor.

Benchmarking across providers and over time.

Covers 48 states across the U.S.A. The callibration data base accounts for about 25% of national discharges each year.

**4a.2. If not currently publicly reported OR used in at least one other accountability application (e.g., payment program, certification, licensing) what are the reasons?** (e.g., Do policies or actions of the developer/steward or accountable entities restrict access to performance results or impede implementation?)

Measure has been advanced to Premier members, who use them within the Premier alliance.

**4a.3. If not currently publicly reported OR used in at least one other accountability application, provide a credible plan for implementation within the expected timeframes -- any accountability application within 3 years and publicly reported within 6 years of initial endorsement.** (Credible plan includes the specific program, purpose, intended audience, and timeline for implementing the measure within the specified timeframes. A plan for accountability applications addresses mechanisms for data aggregation and reporting.)

We are placing the measure in a public space for use in efforts to improve hospital efficiency, which is a national priority.

#### 4b. Improvement

Progress toward achieving the goal of high-quality, efficient healthcare for individuals or populations is demonstrated. If not in use for performance improvement at the time of initial endorsement, then a credible rationale describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.

**4b.1. Progress on Improvement. (Not required for initial endorsement unless available.)**

Performance results on this measure (current and over time) should be provided in 1b.2 and 1b.4. Discuss:

- Progress (trends in performance results, number and percentage of people receiving high-quality healthcare)
- Geographic area and number and percentage of accountable entities and patients included

Trends over time:

Year	Num_Hosp	Cases	ALOS_obs	LOS_exp	O/E Ratio	O-E Deviation
2006	374	5,001,704	3.2	3.1	1.01	0.03
2007	373	5,088,472	3.1	3.2	1.00	-0.01
2008	456	6,183,303	3.1	3.2	0.97	-0.09
2009	505	6,841,630	3.1	3.3	0.95	-0.18
2010	614	7,764,322	3.1	3.3	0.94	-0.20
2011	689	8,364,945	3.1	3.2	0.97	-0.10
2012	729	8,738,990	3.1	3.1	0.99	-0.02
2013	714	7,682,240	3.1	3.1	1.00	0.00
2014	64	40,594	3.1	3.1	1.01	0.02

**4b.2. If no improvement was demonstrated, what are the reasons? If not in use for performance improvement at the time of initial endorsement, provide a credible rationale that describes how the performance results could be used to further the goal of high-quality, efficient healthcare for individuals or populations.**

Very little improvement at the hospital level, but substantial improvement for certain procedures, especially in cardio vascular and orthopedic cases.

#### 4c. Unintended Consequences

The benefits of the performance measure in facilitating progress toward achieving high-quality, efficient healthcare for individuals or populations outweigh evidence of unintended negative consequences to individuals or populations (if such evidence exists).

**4c.1. Were any unintended negative consequences to individuals or populations identified during testing; OR has evidence of unintended negative consequences to individuals or populations been reported since implementation? If so, identify the negative unintended consequences and describe how benefits outweigh them or actions taken to mitigate them.**

Possible unintended result of premature discharge in order to keep ALOS low.

### 5. Comparison to Related or Competing Measures

If a measure meets the above criteria and there are endorsed or new related measures (either the same measure focus or the same target population) or competing measures (both the same measure focus and the same target population), the measures are compared to address harmonization and/or selection of the best measure.

#### 5. Relation to Other NQF-endorsed Measures

Are there related measures (conceptually, either same measure focus or target population) or competing measures (conceptually both the same measure focus and same target population)? If yes, list the NQF # and title of all related and/or competing measures.

No

**5.1a. List of related or competing measures (selected from NQF-endorsed measures)**

**5.1b. If related or competing measures are not NQF endorsed please indicate measure title and steward.**

**5a. Harmonization**

The measure specifications are harmonized with related measures;

**OR**

The differences in specifications are justified

**5a.1. If this measure conceptually addresses EITHER the same measure focus OR the same target population as NQF-endorsed measure(s):**

**Are the measure specifications completely harmonized?**

**5a.2. If the measure specifications are not completely harmonized, identify the differences, rationale, and impact on interpretability and data collection burden.**

NA

**5b. Competing Measures**

The measure is superior to competing measures (e.g., is a more valid or efficient way to measure);

**OR**

Multiple measures are justified.

**5b.1. If this measure conceptually addresses both the same measure focus and the same target population as NQF-endorsed measure(s):**

**Describe why this measure is superior to competing measures (e.g., a more valid or efficient way to measure quality); OR provide a rationale for the additive value of endorsing an additional measure. (Provide analyses when possible.)**

NA

**Appendix**

**A.1 Supplemental materials may be provided in an appendix.** All supplemental materials (such as data collection instrument or methodology reports) should be organized in one file with a table of contents or bookmarks. If material pertains to a specific submission form number, that should be indicated. Requested information should be provided in the submission form and required attachments. There is no guarantee that supplemental materials will be reviewed.

[Available at measure-specific web page URL identified in S.1 Attachment:](#)

**Contact Information**

**Co.1 Measure Steward (Intellectual Property Owner):** Premier, Inc

**Co.2 Point of Contact:** Eugene, Kroch, [eugene\\_kroch@premierinc.com](mailto:eugene_kroch@premierinc.com), 610-328-4824-

**Co.3 Measure Developer if different from Measure Steward:** Premier, Inc

**Co.4 Point of Contact:** Eugene, Kroch, [eugene\\_kroch@premierinc.com](mailto:eugene_kroch@premierinc.com), 610-328-4824-

**Additional Information**

**Ad.1 Workgroup/Expert Panel involved in measure development**

**Provide a list of sponsoring organizations and workgroup/panel members' names and organizations. Describe the members' role in measure development.**

[CMS Care Transitions Measure Development Technical Expert Panel \(Sept 2009 – Oct 2011\)](#) gave feedback with respect to pairing

this measure with rehospitalizations.

**Measure Developer/Steward Updates and Ongoing Maintenance**

**Ad.2** Year the measure was first released: 1996

**Ad.3** Month and Year of most recent revision: 05, 2013

**Ad.4** What is your frequency for review/update of this measure? Once a year

**Ad.5** When is the next scheduled review/update for this measure? 05, 2014

**Ad.6** Copyright statement: NA

**Ad.7** Disclaimers:

**Ad.8** Additional Information/Comments: