

Final Updates to the Leapfrog Hospital Safety Grade Methodology for Fall 2022

On August 1, 2022, Leapfrog published planned updates to the Hospital Safety Grade methodology and held a public comment period through August 15, 2022. We thank commenters for their insightful feedback and suggestions that helped us finalize the methodology. This document includes responses to the comments received and summarizes the final changes that will be made to the scoring methodology effective with the fall 2022 Hospital Safety Grade. In addition, this document includes the fall 2022 Leapfrog Hospital Safety Grade measures, reporting periods, and data sources in [Appendix A](#).

On September 26, 2022, Leapfrog posted two corrections to this document. First, in the description of the Step 1 Imputation Model for Hand Hygiene, Leapfrog corrected a typo that indicated that only the top two performance categories would be imputed from the 2021 Leapfrog Hospital Survey for hospitals that received a fall 2021 or spring 2022 Safety Grade but did not submit a 2022 Leapfrog Hospital Survey by August 31. All four performance categories will be imputed from the 2021 Leapfrog Hospital Survey for hospitals that received a fall 2021 or spring 2022 Safety Grade.

Next, in the description of the Courtesy Review Period, Leapfrog initially announced a two-week review period. However, due to a delay in regenerating the NHSN HAI data for hospitals that submitted a 2022 Leapfrog Hospital Survey by August 31, Leapfrog will hold a two and a half week review period from September 26 – October 12.

Responses to Public Comments

Several commenters shared concerns about allowing hospitals that did not submit a 2022 Leapfrog Hospital Survey to receive points for the Hand Hygiene score through the Safety Grade Imputation model.

While Leapfrog and the national expert panel consider information that has been affirmed and verified via Leapfrog's Hospital Survey process, when hospitals decline to provide key data, Leapfrog imputes scores using a methodology designed to estimate their performance as accurately as possible. The Hospital Safety Grade imputation model was developed with guidance from Mathematica and Leapfrog's national expert panel. Several different options for imputation were tested for both validity and reliability.

Using the mean performance, rather than the bottom quartile or decile, produced the strongest agreement between predicted and actual scores, meaning the use of the mean most accurately resembled the actual performance we could expect if hospitals were to report to the Leapfrog Hospital Survey. In response to concerns raised through this public comment period, we will revisit the design of our imputation model with our expert panel over the next year to ensure the methodology remains valid and reliable. Hand Hygiene is a key component of patient safety. Leapfrog is appreciative of hospitals that strive to reach Leapfrog's hand hygiene standard. We thank those hospitals that are committed to transparency and providing current data through the Leapfrog Hospital Survey.

Commenters shared concerns about the time and resources needed to perform the required number of direct observations required to achieve Leapfrog's Hand Hygiene standard.

Hand hygiene has been a bedrock principle of patient safety for over a century, but a significant body of literature suggests that many hospitals are falling short. Studies show that without evidence-based monitoring protocols in place hospitals will overestimate levels of hand hygiene compliance, and as a result underestimate the need for improvement. Thus, a damaging cycle continues, with hospitals paying less attention to hand hygiene year after year. This puts patients in unnecessary danger.

While Leapfrog's Hand Hygiene Standard reflects the literature and expert consensus, we recognize from these and prior comments that many hospitals find the monitoring domains of Leapfrog's standard difficult to achieve in the near term. Moreover, the focus on the monitoring domain may have had the unintentional consequence of deemphasizing the other four critical domains in the standard: Feedback, Training and Education, Infrastructure, and Culture. As a result, the 2022 Leapfrog Hospital Survey offered an alternative path to achieve the Hand Hygiene Standard: monitor 100 hand hygiene opportunities (rather than 200) per unit per month AND meet all other elements for the remaining domains. The alternate pathway has allowed many hospitals, including rural hospitals, to achieve the standard, while also bringing renewed focus to the other domains important to a successful hand hygiene program. We do expect that hospitals will move toward more aggressive hand hygiene monitoring, and Leapfrog will continue to revisit the elements of the standard with the goal of setting a higher standard as national norms improve.

While we recognize the constraints of limited staffing resources commenters noted, hand hygiene compliance itself is a staffing strategy; poor compliance has an impact on workforce health and well-being and sends a demoralizing message to staff that the spread of infection is not a priority concern in the hospital. Given its critical importance in protecting patients and its impact on hospital culture, hand hygiene should be a top priority for every hospital, including hospitals in rural communities.

One commenter expressed concern about a shortened Courtesy Safety Grade Review Period.

We appreciate this concern but wish to reassure hospitals that a shortened Review Period is unlikely to hinder hospitals' ability to review data that will be used to calculate their Safety Grade numerical score. There are numerous prior opportunities to review data used in the Grade. Hospitals that submitted their 2022 Hospital Survey by the [Submission Deadline of June 30](#) were able to view their Survey results as early as July 12. Leapfrog performed two [Extensive Monthly Data Verifications](#), and hospitals were able to correct data entry and reporting errors prior to the August 31 Data Snapshot Date. Additionally, hospitals were sent confidential CMS preview reports for HCAHPS and HAI in May and those data have been publicly reported since July. Finally, hospitals were sent confidential preview reports for the DRA HAC measures in June and the data from the spring 2022 Hospital Safety Grade for PSI 4 and PSI 90 will be used again this fall.

Commenters expressed support for the new CMS Footnote 23 policy, and one commenter suggested we include the first and second survey contacts when notifying a hospital that footnote 23 was present in their data

In response to this suggestion, we have updated the policy to include the first and second survey contacts in communications for hospitals that submitted a 2022 Hospital Survey and have CMS Footnote 23 present. Hospitals that have not submitted a Survey will be contacted via a mailed letter.

Two commenters expressed concern about using PSI-90 results from the spring 2022 Hospital Safety Grade in the fall 2022 Hospital Safety Grade.

While CMS initially proposed via the FY2023 IPPS Proposed Rule to suppress PSI 90 for FY2023, they have reversed their decision in the final rule issued this month. Leapfrog expects to have updated PSI 90 data available for the spring 2023 Hospital Safety Grade. We appreciate hospital concerns about using the older PSI 90 data to calculate the fall 2022 Hospital Safety Grades but given the importance of the ten medical and surgical complications included in the composite, Leapfrog does not believe removing the measure from the calculation is in the best interest of informing consumers, purchasers, and other healthcare stakeholders.

Summary of Final Methodology Changes

1. Hand Hygiene Measure

Scoring Update

Beginning with the fall 2022 Hospital Safety Grade, the following Hospital Safety Grade scores will be assigned to **each** of the four performance categories from the **2022 Leapfrog Hospital Survey** for the Hand Hygiene measure:

Table 1. Hospital Safety Grade Measure Scores Assigned to Leapfrog Hospital Survey Performance Categories for the Hand Hygiene Measure, Beginning Fall 2022

Leapfrog Hospital Survey Performance Category for the Hand Hygiene Measure	Hospital Safety Grade Score
Achieved the Standard 	100
Considerable Achievement 	70
Some Achievement 	40
Limited Achievement 	15

Imputation Model Update

Also beginning with the fall 2022 Hospital Safety Grade, for hospitals that decline to respond to the 2022 Leapfrog Hospital Survey and are therefore publicly reported as “Declined to Respond” for the Hand Hygiene measure on Leapfrog’s [public reporting website](#), Leapfrog will now impute a Hospital Safety Grade score for the Hand Hygiene measure when calculating the Hospital Safety Grade.

Step 1: Use a hospital’s most recent score on the measure

Hospitals qualified for Step 1 include: Hospitals that submitted a 2020 or 2021 Leapfrog Hospital Survey and received a Hospital Safety Grade in the most recent four rounds (e.g., spring 2022, fall 2021, spring 2021, or fall 2020). For Step 1 of the imputation model, Leapfrog will assign a Hospital Safety Grade score based on the most recent performance category achieved via the Leapfrog Hospital Survey in 2020 or 2021, as outlined in [Table 1](#).

Step 2: Use the mean of the scores assigned to similar hospitals eligible for a Hospital Safety Grade

Hospitals qualified for Step 2 include: Hospitals that did not submit a 2020 or 2021 Leapfrog Hospital Survey or receive a Hospital Safety Grade in the most recent four rounds (e.g., spring 2022, fall 2021, spring 2021, or fall 2020). For Step 2 of the imputation model, Leapfrog will assign the hospital to a cohort of similar hospitals using up to four hospital

characteristics obtained from either the 2022 Leapfrog Hospital [Survey Results](#) or the most recent CMS Impact file: (1) urban/rural status (from the Impact File), (2) safety net status (determined by disproportionate share hospital patient percentage from the Impact File), (3) number of beds (from the Impact file), and (4) teaching status. Teaching status is obtained from the 2022 Leapfrog Hospital [Survey Results](#) if available; otherwise, it is determined from the Resident to Bed Ratio from the Impact file if available. Teaching status is only used for urban hospital cohorts.

Once assigned to a cohort, the hospital is assigned the lowest of the two mean scores for its cohort:

- **Mean of current and recent scores:** The mean score of the cohort is calculated based on the hospital Safety Grade scores in the current round (i.e., fall 2022) from either Leapfrog's publicly reported Survey Results or Step 1 of the imputation model OR
- **Mean of scores obtained in the hospitals' first year of reporting on Leapfrog's Hand Hygiene via the Leapfrog Hospital Survey:** The mean score of the cohort is calculated based on the performance category each hospital in the cohort achieved the first time they reported on the Hand Hygiene measure via the Leapfrog Hospital Survey (e.g., from the 2020, 2021, or 2022 Leapfrog Hospital Survey). To calculate cohort scores, Leapfrog will assign a Hospital Safety Grade score to the performance category achieved via the 2020, 2021, or 2022 Leapfrog Hospital Survey, as outlined in [Table 1](#).

2. Shortened Courtesy Safety Grade Review Period

Due to a delay in Leapfrog regenerating the NHSN HAI data for hospitals that submitted a Leapfrog Hospital Survey by August 31, the fall 2022 courtesy review period will open on Monday, September 26, 2022 and close on Wednesday, October 12, 2022.

During this time, hospitals can review their data for accuracy (i.e., identify recording errors, hospital name and address changes, hospital CCN changes, etc.) on a secure website, review the fall 2022 Safety Grade methodology, and access the fall 2022 Hospital Safety Grade calculator. Leapfrog will continue to hold a two-week Letter Grade Embargo Period after the close of the Courtesy Safety Grade Review Period, which will allow hospitals the opportunity to preview their letter grade prior to the public announcement. More information is available on the Safety Grade [website](#).

3. CMS Footnote 23 Policy

In previous rounds of the Hospital Safety Grade, Leapfrog did not use measure scores published by CMS if the measure score was accompanied by footnote 23, which indicates that "The data are based on claims that the hospital or facility submitted to CMS. The hospital or facility has reported discrepancies in their claims data."

Beginning this fall, Leapfrog will notify hospitals that have CMS footnote 23 present for one or more claims-based measure scores (e.g., DRA HAC Rate, PSI 4 rate, or PSI 90 rate) and provide hospital CEOs with the opportunity to request that Leapfrog use the measure score that is accompanied by the footnote. Written requests must be received prior to the close of the Safety Grade Review Period. If written requests are not received by the close of the Review Period, the measure will not be used to calculate the Hospital Safety Grade.

For hospitals that submit a Leapfrog Hospital Survey by the Data Snapshot Date, the CEO, Primary Survey Contact, and Secondary Survey Contact will be notified at the email addresses included in the Hospital's Survey Profile. For hospitals that do not submit a Leapfrog Hospital Survey by the Data Snapshot Date, the CEO will be contacted by certified letter.

Appendix A: Fall 2022 Leapfrog Safety Grade Measures, Anticipated Reporting Periods, and Data Sources

PROCESS/STRUCTURAL MEASURES (12)				
Measure Name	Primary Data Source	Reporting Period	Secondary Data Source	Reporting Period
Computerized Physician Order Entry (CPOE)	2022 Leapfrog Hospital Survey	2022	Imputation Model Applied	N/A
Bar Code Medication Administration (BCMA)	2022 Leapfrog Hospital Survey	2022	Imputation Model Applied	N/A
ICU Physician Staffing (IPS)	2022 Leapfrog Hospital Survey	2022	Imputation Model Applied	N/A
Safe Practice 1: Culture of Leadership Structures and Systems	2022 Leapfrog Hospital Survey	2022	N/A	N/A
Safe Practice 2: Culture Measurement, Feedback & Intervention	2022 Leapfrog Hospital Survey	2022	N/A	N/A
Safe Practice 9: Nursing Workforce	2022 Leapfrog Hospital Survey	2022	N/A	N/A
Hand Hygiene	2022 Leapfrog Hospital Survey	2022	Imputation Model Applied	N/A
H-COMP-1: Nurse Communication	CMS	10/01/2020 - 09/30/2021	N/A	N/A
H-COMP-2: Doctor Communication	CMS	10/01/2020 - 09/30/2021	N/A	N/A
H-COMP-3: Staff Responsiveness	CMS	10/01/2020 - 09/30/2021	N/A	N/A
H-COMP-5: Communication about Medicines	CMS	10/01/2020 - 09/30/2021	N/A	N/A
H-COMP-6: Discharge Information	CMS	10/01/2020 - 09/30/2021	N/A	N/A

OUTCOME MEASURES (10)				
Measure Name	Primary Data Source	Reporting Period	Secondary Data Source	Reporting Period
Foreign Object Retained	CMS	07/01/2018 – 12/31/2019	N/A	N/A
Air Embolism	CMS	07/01/2018 – 12/31/2019	N/A	N/A
Falls and Trauma	CMS	07/01/2018 – 12/31/2019	N/A	N/A
CLABSI	2022 Leapfrog Hospital Survey	01/01/2021 – 12/31/2021	CMS	10/01/2020 - 09/30/2021
CAUTI	2022 Leapfrog Hospital Survey	01/01/2021 – 12/31/2021	CMS	10/01/2020 - 09/30/2021
SSI: Colon	2022 Leapfrog Hospital Survey	01/01/2021 – 12/31/2021	CMS	10/01/2020 - 09/30/2021
MRSA	2022 Leapfrog Hospital Survey	01/01/2021 – 12/31/2021	CMS	10/01/2020 - 09/30/2021
C. Diff.	2022 Leapfrog Hospital Survey	01/01/2021 – 12/31/2021	CMS	10/01/2020 - 09/30/2021
PSI 4: Death rate among surgical inpatients with serious treatable conditions	CMS	07/01/2018 – 12/31/2019	N/A	N/A
CMS Medicare PSI 90: Patient safety and adverse events composite*	CMS	07/01/2018 – 12/31/2019	N/A	N/A

* CMS calculates PSI 90 using the ten (10) component PSIs. While scores for each of the 10 component PSIs will not be used to calculate fall 2022 Hospital Safety Grades, they will be publicly reported on the Hospital Safety Grade [website](#).

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