CBE ID

5110

Title

Standardized Readmission Ratio (SRR) for dialysis facilities

Project

Cost and Efficiency

Endorsement Status

New

Is Under Review

Yes

Next Maintenance Cycle

Spring 2026

Steward

Centers for Medicare & Medicaid Services

1.0 New or Maintenance

New

1.1 Measure Structure

Single Measure

1.3 Electronic Clinical Quality Measure (eCQM)

No

1.6 Measure Description

The Standardized Readmission Ratio (SRR) for a dialysis facility is the ratio of the number of observed index discharges from acute care hospitals to that facility that resulted in an unplanned readmission to an acute care hospital within 4-30 days of discharge, to the expected number of readmissions given the discharging hospital's and patient's characteristics, and based on a national event rate. Note that the measure applies exclusively to Medicare covered ESRD chronic dialysis patients enrolled in either Fee-for-Service (FFS) or Medicare Advantage (MA) programs.

This measure was previously endorsed under CBE ID 2496 (2015-2020). We are now submitting it with improvements for endorsement under a new CBE ID 5110.

1.6a Material Specification Change(s)

No

1.7 Measure Type

Outcome

1.8 Level of Analysis

Facility

1.9 Care Setting

Other

1.9b Other Care Setting

Dialysis Facility

1.10 Measure Rationale

Unplanned readmission rates are an important indicator of patient morbidity and quality of life. On average, dialysis patients are admitted to the hospital nearly 1.5 times a year and hospitalizations account for approximately 35% of total Medicare expenditures for dialysis patients [2]. In both 2021 and 2022, between 31-33% of dialysis patient discharges from an all-cause hospitalization were followed by an unplanned readmission within 30 days [2]. Measures of the frequency of unplanned readmissions, such as SRR, help efforts to control escalating medical costs, play an important role in providing cost-effective health care, and support coordination of care across inpatient and outpatient settings. Preventive interventions such as fluid weight management, management of mineral and bone disease, anemia management as well as post-discharge processes of care (medication reconciliation) by dialysis facilities, and coordination of care with other providers in the pre- and post-discharge periods (communication with the dialysis provider; medication reconciliation) have the potential to prevent hospital readmissions for ESRD dialysis patients. Preventing hospital readmissions is regarded as a shared responsibility that can be impacted by both dialysis providers and hospitals.

Finally, findings across all performance years of the Center for Medicare and Medicaid Innovation's Comprehensive ESRD Care Initiative suggest care coordination may reduce readmission risk [1]. The findings of this controlled study showed an overall decrease of 2% in the percentage of Medicare beneficiaries with at least one readmission, among those aligned to an ESRD Seamless Care Organization, relative to a matched comparison group of facilities.

References:

[1] Marrufo et al., Fifth Annual Evaluation Report of the Comprehensive ESRD Care Initiative. Prepared for the Centers for Medicare and Medicaid Services. Jan 2022. https://www.cms.gov/priorities/innovation/data-and-reports/2022/cec-annrpt-py5. Accessed Aug 8, 2025.

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1.13 Data Dictionary

Attached

1.13a Attach Data Dictionary

SRR_DataDictionary_04-2026.xlsx

1.14 Numerator

The number of hospital discharges among eligible Medicare ESRD dialysis patients during the reporting period that are followed by an unplanned hospital readmission within 4-30 days of discharge.

1.14a Numerator Details

Index discharges are restricted to Medicare-covered hospitalizations for inpatient care at short-term acute care hospitals and critical access hospitals. Discharges from SNFs, long-term care hospitals (LTCHs), rehabilitation hospitals and PPS-exempt cancer hospitals - as well as those from separate dedicated units for hospice, rehabilitation and psychiatric care - are excluded.

Potential readmissions are:

- Medicare-covered hospitalizations for inpatient care at short-term acute care hospitals and critical access hospitals.
- Classified as either a planned or unplanned admission according to the planned readmission algorithm (see below for further discussion).

Note that hospitalizations where the patient dies on the date of discharge are included for consideration as potential readmissions (in other words, the outcome of the readmission itself is not relevant to this measure).

The numerator for a given facility is the total number of index hospital discharges during the reporting period that are followed by unplanned readmissions within 4-30 days of discharge and that are not preceded by a “planned” readmission or other competing event that also occurred within 4-30 days of discharge. If the first event during days 4-30 after discharge is an unplanned hospitalization, then the index discharge is classified as having a readmission. If the first event during days 4-30 is a planned hospitalization or other competing event, then the index discharge is classified as not having a readmission. Competing events include admissions to rehabilitation or psychiatric hospitals, death, transplant, loss to follow-up, withdrawal from dialysis, and recovery of renal function. A readmission is considered “planned” under three scenarios:

i) The patient undergoes a procedure that is always considered planned (e.g., kidney transplant) or has a primary diagnosis that always indicates the hospitalization is planned (e.g., maintenance chemotherapy).

ii) The patient undergoes a procedure that MAY be considered planned if it is not accompanied by an acute diagnosis. For example, a hospitalization involving a heart valve procedure accompanied by a primary diagnosis of diabetes would be considered planned, whereas a hospitalization involving a heart valve procedure accompanied by a primary diagnosis of acute myocardial infarction (AMI) would be considered unplanned.

iii) The readmission was to a rehabilitation, long-term care, or psychiatric facility.

This definition follows from the algorithm developed by Yale New Haven Health Services Corporation/Center for Outcomes Research & Evaluation (YNHHSC/CORE) for The Centers for Medicare and Medicaid Services 2018 All-Cause Hospital Wide Measure Updates and Specifications Report Hospital Level 30-Day Risk-Standardized Readmission Measure – Version 7.0. https://www.qualitynet.org/files/5d0d375a764be766b010141f?filename=2018_Rdmsn_Updates%26Specs_Rpts.zip

1.15 Denominator

The expected number of index discharges during the reporting period that are followed by an unplanned readmission within 4-30 days in each facility. The expected number is derived from a model that accounts for patient characteristics, the dialysis facility to which the patient is discharged, and the discharging acute care or critical access hospital involved.

1.15a Denominator Details

General Inclusion Criteria for Dialysis Patients

Patients are included in the measure only after they have had ESRD for greater than 90 days. This minimum 90-day period assures that patients are eligible for Medicare, either as their primary or secondary insurer, and that follow-up is complete. Thus, the measure excludes hospitalizations during the first 90 days of ESRD as well as patients who die or recover kidney function during that time period.

In order to assure completeness of information on hospitalizations for all patients included in the analysis, we restrict to Medicare patients who are either enrolled in Medicare Advantage or who reach a certain threshold of Medicare outpatient dialysis and inpatient claims. Specifically,

months within a given dialysis patient-period are used for SRR calculation when the patient is enrolled in Medicare Advantage or meets the criterion of being within two months after a month with either: (a) $1200+ of Medicare-paid dialysis claims OR (b) at least one Medicare inpatient claim.

Index discharges are restricted to Medicare-covered hospitalizations for inpatient care at short-term acute care hospitals and critical access hospitals. Discharges from SNFs, long-term care hospitals (LTCHs), rehabilitation hospitals and PPS-exempt cancer hospitals - as well as those from separate dedicated units for hospice, rehabilitation and psychiatric care - are excluded. Index discharges are attributed to the dialysis provider to which the patient is discharged at the end of the hospital stay. In other words, the facility to which the patient is discharged is held responsible for any unplanned readmissions occurring within 4-30 days of the index discharge, regardless of whether the patient is still being treated at the facility associated with the index discharge at the time of readmission.

1.15b Denominator Exclusions

An Index Discharge is excluded when it:

- Occurs at a non-acute care hospital
- Ends in death
- Is against medical advice
- Includes a primary diagnosis for certain types of cancer, mental health or rehab prosthesis
- Includes a revenue center code indicating rehabilitation
- Occurs after a patient's 12th admission in the calendar year
- Is from a PPS-exempt cancer hospital
- Includes a patient not on dialysis and under care of a dialysis facility at discharge
- Is followed within three days by any hospitalization (at acute care, long-term care, rehabilitation, or psychiatric hospital or unit), death, transplant, loss to follow-up, withdrawal from dialysis, or recovery of renal function
- Is associated with an inpatient stay of 365 days or longer

1.15c Denominator Exclusions Details

- Discharged against medical advice: We determine discharge status from the inpatient claim.
- Certain diagnoses: The primary diagnosis at discharge is available on the inpatient claim; we group these diagnoses into more general categories using AHRQ's Clinical Classification Software (CCS; see
- http://www.hcup-us.ahrq.gov/toolssoftware/ccs/ccs.jsp for descriptions of each CCS). The excluded CCSs are shown below.
    - Cancer: 42, 19, 45, 44, 17, 38, 39, 14, 40, 35, 16, 13, 29, 15, 18, 12, 11, 27, 33, 32, 24, 43, 25, 36, 21, 41, 20, 23, 26, 28, 34, 37, 22, 31, 30
    - Psychiatric: 657, 659, 651, 670, 654, 650, 658, 652, 656, 655, 662
    - Rehab for prosthesis: 254
- Presence of one or more of the following revenue center codes: 0024, 0118, 0128, 0138,

0148, 0158
- Number of admissions: We remove any records for a patient after his/her 12th discharge in the calendar year.
- PPS-exempt cancer hospitals: The following hospitals are listed as PPS-exempt cancer hospitals in the Federal Register (http://www.gpo.gov/fdsys/pkg/FR-2011-07-18/html/2011-16949.htm): 050146, 050660, 100079, 100271, 220162, 330154, 330354, 360242, 390196, 450076, 500138
- Any index discharge with an inpatient readmission of any type, a death, a transplant, loss to follow-up, withdrawal from dialysis, or recovery of renal function occurring within the first 0-3 days following the index discharge.

1.15d Age Group

Children (0-17 years), Adults (18-64 years), Older Adults (65 years and older)

1.16 Type of Score

Ratio

1.17 Measure Score Interpretation

Better performance = Lower score

1.18 Calculation of Measure Score

The numerator is the observed number of hospital discharges that are followed by an unplanned readmission within 4-30 days. The denominator is the expected number of index discharges that are followed by an unplanned readmission within 4-30 days in each facility adjusted for the patient mix and the discharging hospital characteristics. The measure for a given facility is calculated by dividing the numerator by the denominator. See 1.18a for **SRR_Flowchart_04-2026_508.pdf** attachment

1.18a Attach measure score calculation diagram

SRR_Flowchart_04-2026_508.pdf

1.19 Measure Stratification Details

N/A

1.20 Types of Data Sources

Administrative Data, Claims Data, Registries

1.21a Data Collection Tool URL(s)

http://example.com

1.25 Data Source Details

Data are derived from the EQRS patient-specific clinical and administrative data, including ESRD patient list, CMS-2728 Medical Evidence Form, CMS-2746 Death Notification Form, and patient

admission and discharge data, from all Medicare certified dialysis facilities, the Medicare Enrollment Database (EDB), and Medicare claims data.

In addition, the database includes transplant data from the Scientific Registry of Transplant Recipients (SRTR), data from the Nursing Home Minimum Dataset, and the provider and survey and certification data from the Internet Quality Improvement and Evaluation System (iQIES) data.

Information on hospitalizations is obtained from Medicare inpatient and skilled nursing claims Standard Analysis Files (SAFs), and past-year comorbidity data are obtained from multiple claim types (inpatient, home health, hospice (Part A only), skilled nursing facility claims).

Fee-for-service (FFS) Medicare Part A (inpatient) and Part B (outpatient and physician supply) claims for dialysis patients are included in the current database; additionally, the database now incorporates Part C Medicare Advantage (MA) data for the MA enrollees. This database ensures that hospital, outpatient dialysis, and other billable services under Medicare – whether FFS or MA – are captured.

1.26 Minimum Sample Size

There is not a minimum sample size needed to calculate the performance score. Public reporting of this measure on DFCC is restricted to facilities with at least 11 index discharges to ensure stable estimates and for the measure to comply with restrictions on reporting of potentially identifiable patient information related to small cell size.

2.1 Attach Logic Model

SRR-Logic-Model_04-2026_508.pdf

2.2 Evidence of Measure Importance

Several studies and commentaries strongly suggest pre- and post-discharge interventions within the purview of dialysis providers may reduce the risk of unplanned readmissions within the ESRD chronic dialysis population [3, 7, 13, 14, 23]. Plantinga et al found that interventions in the immediate post-discharge period were associated with reduced readmission risk among hemodialysis patients [23]. They also suggest that post-discharge processes of care may help identify certain patients at higher risk for readmission, creating opportunities for dialysis providers to initiate interventions to reduce readmissions. However, early readmissions raised the risk of subsequent mortality [23]. Chan and colleagues found that certain post-discharge assessments and changes in treatment at the dialysis facility may be associated with a reduced risk of readmission [8]. Assessments included hemoglobin testing and modification of EPO dose; mineral and bone disease testing and modification of vitamin D; and, importantly, modification of dry weight after discharge. The risk of unplanned hospital readmission was reduced when these

assessments were completed within the first seven days post-hospital discharge. In a commentary, the Chan 2009 study and several others are cited as examples of the potential for care coordination to reduce readmissions among ESRD dialysis patients [25]. The findings from Chan and colleagues are further supported by results from a recent study comparing principal diagnosis of index hospitalizations and their associated readmissions [8, 17]. Tables included in the paper's supplementary materials clearly demonstrate that a significant portion of readmission principal discharge diagnoses are for dialysis-related conditions. For example, regardless of the index hospitalization cause (i.e. infectious, endocrine, cardiovascular, GI, dermatologic, renal, etc), the top principal discharge diagnosis lists for related readmissions prominently included diagnoses typically associated with fluid overload and failure of fluid management in dialysis patients (fluid overload, hypertension, CHF, etc). These results, in combination with more recent work [25], suggest that adjustment of patient target weight by the dialysis facility in the early post-hospitalization discharge period (to adjust for the frequent weight loss and/or in-hospital re-assignment of a lower post-dialysis target weight) is a likely mechanism for a substantial minority of unplanned readmissions in the US chronic dialysis population.

Studies in the non-dialysis setting have cited post-interventions or a combination of pre-and post-discharge interventions as drivers for reducing unplanned readmissions [1, 2, 3, 5, 6, 7, 9, 10, 11, 12, 15, 16, 19, 20, 22]. However, a recent study and related commentary challenge the reported magnitude of reductions in hospital-wide readmissions since 2010, as part of the publicly reported Hospital Wide Readmission (HWR) measure for the Hospital Readmission Reduction Program (HRRP) [21, 24]. They suggest the potential driver of these reductions is in part attributed to a change in diagnosis coding policy for inpatient claims that took effect in October 2012. While it is not yet settled whether the reductions were primarily or only nominally driven by the ability of hospitals to report more condition diagnoses, resulting in more robust comorbidity risk adjustment in the measure, the concern has generated attention about whether reported improvements in readmission rates is a result of the HWR and by extension better care delivery by hospitals. These concerns are not considered germane to drivers of readmission reduction based on the dialysis facility readmission measure. The SRR was implemented by CMS in 2015, after the 2012 coding changes took effect. Therefore, trends in dialysis patient 30-day readmissions only reflect the period since the claims-based diagnoses coding changes, and observed reductions since that time are not considered an artifact of the 2012 inpatient diagnosis coding changes.

Finally, findings across all performance years of the Center for Medicare and Medicaid Innovation's Comprehensive ESRD Care Initiative suggest care coordination may reduce readmission risk [18]. The findings of this controlled study showed an overall decrease of 2% in the percentage of Medicare beneficiaries with at least one readmission, among those aligned to an ESRD Seamless Care Organization, relative to a matched comparison group of facilities.

References:

[1] Ahmed A, Thornton P, Perry GJ, Allman RM, DeLong JF. Impact of atrial fibrillation on mortality and readmission in older adults hospitalized with heart failure. Eur J Heart Fail. 2004;6(4):421–426.

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2.3 Anticipated Impact

Not applicable. This measure was previously endorsed under CBE ID 2496 (2015-2020). We are

now submitting it with improvements for endorsement under a new CBE ID 5110. The measure has been implemented in two federal programs for many years.

2.4 Performance Gap

Data for Table 1 are from the data described in 1.25 for the year 2023. The total number of dialysis facilities included in the performance score calculation was 7,710, and the total number of index discharges was 460,594.

Table 1. Performance Scores by Decile

See 2.4a for **SRR_Table 1_Final_508.pdf** attachment for table and text

2.4a Attach Performance Gap Results

SRR_Table-1_Final_508.pdf

2.5 Health Care Quality Landscape

Not applicable. This measure was previously endorsed under CBE ID 2496 (2015-2020). We are now submitting it with improvements for endorsement under a new CBE ID 5110. The measure has been implemented in two federal programs for many years.

2.6 Meaningfulness to Target Population

There are several studies indicating that patients with kidney failure who require dialysis value an assessment of hospitalization rates at the dialysis facility level. This would extend to re-hospitalizations.

In a study of 81 dialysis patients and 45 caregivers that assessed what outcomes were most important, respondents gave high priority to clinical outcomes such as infection that are associated with hospitalization [1]. In this study, outcomes such as hospitalization were given higher importance due to the disruption and inconvenience of daily living. Similarly, in a study of over 4,000 HD patients, reduction in hospital stays was among the highest priority outcomes when asked to rate the importance of 23 patient-relevant outcomes [2]. Finally, the ESRD Networks that are charged with helping dialysis facilities improve quality of care have reduction in hospitalizations as part of the statement of work. These Networks have Patient Advisory Committees that provide input and peer to peer communication to help reduce hospitalizations.

References:

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3.1 Contributions Towards Closing Care Gaps

This domain is optional for the Spring 2026 cycle.

4.1a Data Structure and Availability

All the data incorporated into our database come from structured data. Data collection for this measure is accomplished via data sources including EQRS, a web-based and electronic batch submission platform maintained and operated by CMS contractors, Medicare Claims, and other supplemental data sources (see Section 1.25 Data Source Details). Publicly reported measures like this one are reviewed on a regular basis by dialysis facility providers and rare instances of inaccurate or missing data are present (based on comments received during facility previews).

4.1b Implementation Costs and Burden

As the data required for this measure is already part of routine data collection, no additional costs or burden are anticipated.

4.1c Confidentiality

Public reporting of this measure on DFCC would be restricted to facilities with at least 11 eligible index discharges to comply with restrictions on reporting of potentially identifiable patient information related to small cell size.

4.3 Feasibility Informed Final Measure

No feasibility challenges have been identified that resulted in a change to the measure. We have expanded our inclusion of Medicare Advantage patients in identifying index discharges, readmissions, and comorbidities. All other measure specifications have remained unchanged since the previous endorsement cycle. The feasibility profile is not affected by the changes made.

4.4 Proprietary Information

Not a proprietary measure and no proprietary components

5.1.1 Data Used for Testing

EQRS data from January-December 2023 and Medicare claims data from January-December 2023. See section 1.25 for more detail about data sources.

5.1.1a Dates of Testing Data

EQRS data from January-December 2023 and Medicare claims data from January-December 2023. See section 1.25 for more detail about data sources.

5.1.2 Differences in Data

None

5.1.3 Characteristics of Measured Entities

In 2023 there were 7,252 facilities included in the measure. Facilities had a median caseload of around 29 eligible patients and median eligible index discharges of 55.

Number of facilities and median facility size, 2023

Year	Total Facilities	Total Index Discharges	Median Index Discharges Per Facility	Median Patients Per Facility
2023	7,252	457,965	55	29

5.1.4 Characteristics of Units of the Eligible Population

See 7.1 Supplemental Attachment section for **SRR_5.1.4_Final_508.pdf**, which contains the text and tables for this question

5.2.1 Level(s) of Reliability Testing Conducted

Person or encounter level (i.e., data element) (e.g., inter–abstractor reliability), Accountable entity level (i.e., measure score) (e.g., signal-to-noise analysis)

5.2.2 Method(s) of Reliability Testing

A key metric for SRR is the *inter-unit reliability* (IUR), which quantifies the proportion of total variation in a measure that is attributable to true differences between facilities, rather than to random variation. By definition, IUR ranges from 0 to 1, with higher values indicating that most of

the observed variation in the quality measure reflects actual differences in facility performance—thereby implying higher precision in comparing facilities.

However, due to the ratio form of SRR, directly estimating the within-facility variance is not straightforward. We use a bootstrap-based approach to estimate this component of variability.

Let $T_1,\ldots,T_N$ represent the SRR values for N facilities. For each facility i with n_i observations, we draw B bootstrap samples *with replacement* from its patients (we found B=100 to be sufficient based on numerical experiments). For each sample, we compute the corresponding bootstrapped SRRs, denoted of $T^*_{i,1}$, … $T^*_{i,B}$. We then compute the sample variance of these bootstrapped SRRs for each facility, denoted S_i^{*2}.

An estimate of the within-facility variance of SRR, namely, $\sigma_{t,w}^2$, is given by the bootstrap variance:

$$S_{t,w}^2 = \Sigma^N_{i=1}[(n_i-1)\, S_i^{*2}]/\, \Sigma^N_{i=1}(n_i-1).$$

Calling on formulas from the one-way analysis of variance, an estimate of the overall variance of T_i is

$$S_t^2 = \Sigma^N_{i=1}[n_i\,(T_i - \check{T})^2]/\,[n'(N-1)],$$

where

$$\check{T} = Sn_i T_{i\,/}\, Sn_i$$

is the weighted mean of the observed SRR and

$$n' = (Sn_i - Sn_i^2/Sn_i)/(N-1)$$

is approximately the average facility size (number of observations per facility). Note that S_t^2 is the

total variation of SRR and is an estimate of $\sigma_b^2 + \sigma_{t,w}^2$, where $\sigma_b^2$is the between-facility variance, the true signal reflecting the differences across facilities. Thus, the estimated IUR, which is defined by

$IUR = \sigma_b^2/(\sigma_b^2 + \sigma_{t,w}^2)$,

can be estimated with $(S_t^2 - S_{t,w}^2)/S_t^2$.

Note: SRR calculations were restricted to facilities with at least 11 index discharges to ensure stable estimates and comply with restrictions on reporting of potentially identifiable patient information related to small cell size.

Data Element Reliability

- EQRS Data: Some data for this measure comes from the End Stage Renal Disease Quality Reporting System (EQRS), a CMS-owned data system that collects data directly from all Medicare-certified dialysis facilities. EQRS has processes in place [1] to ensure the reliability and validity of the patient level data used for a broad array of measure calculations, including this measure. Briefly, CMS performs a random selection of 300 eligible dialysis facilities each year. Ten patient records are randomly selected from a single quarter each year from each of the facilities selected to participate. The most recent reported review included EQRS entries from April 1, 2025 to June 30, 2025. Experienced nurse reviewers assessed the data obtained from the medical records on each of 60 data elements selected from EQRS for the reporting month.

- Medicare Claims Data: CMS claims data are routinely used for quality measures that UM-KECC and other measure developers have crafted and have long been considered reliable. CMS routinely assesses the accuracy of claims codes through auditing programs as part of an effort to ensure appropriate billing by providers in both the Fee-for-Service and Medicare Advantage programs [2]. In addition, CMS conducts data analysis to identify potential problem areas and detect fraud, and audits important data fields used in our measures, including diagnosis and procedure codes and other elements that are consequential to payment.

References:

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https://www.cms.gov/medicare/audits-compliance/part-c-d/program-audits

5.2.3 Reliability Testing Results

The IUR for SRR in 2023 is 0.336, which means that one third of the variation can be attributed to between-facility variation. The SRR measure IUR is similar to previous cycles, and has been endorsed and re-endorsed for the last several cycles. Please see the **SRR_Table 2a_Table 2b_IUR Info_Final_508.pdf** attachment in Section 5.2.3a for additional information but to summarize:

- Dialysis facilities are extremely small compared to other health care entities (e.g. hospitals, nursing homes) such that risk adjusted measures do not have a large enough facility size to achieve an IUR of 0.6
- Determining if a facility is "worse than expected" uses statistical hypothesis testing to mitigate the risk of inappropriately flagging small facilities. Specifically, smaller facilities need to have an SRR farther from the median to be flagged compared to larger facilities.
- Star Ratings for dialysis facilities combine information across multiple measures to reduce random noise so that even a measure with a low IUR can contribute to raising the overall reliability of the combined measure set.
- The Quality Incentive Program (QIP) uses a small-facility adjuster (generally applied to facilities with 25 or fewer eligible patients), which helps mitigate the low IURs that would otherwise contribute to payment reductions.
- The number of preventable events, even for facilities in the lower IUR decile groups, is generally >3, suggesting the potential for improvement at a given facility.

Data element reliability

- EQRS: Per the executive summary [1], the rate of correct matches between data extracted from medical records and the same data fields in EQRS was 97.0% for all data elements. A total of 1.7% of entries in either EQRS (.1%) or Medical Records (1.6%) contained missing information. The rate of discrepant comparisons (incorrect matches between data elements in the medical record and EQRS) was 1.3% in CY2024. Of note, this overall error rate has been steadily declining over the past 5 years for a rate of 4.9% in CY2020. Of the 60 data elements examined, error rates generally ranged from 0 - 2.6%

References:

1. End Stage Renal Disease Facility Data Validation. CMS QualityNet. https://qualitynet.cms.gov/files/68d58e4e9fb3148bd3307ea6?filename=2025_EQRS_ExecSummary.pdf (accessed 5/12/2026)

In terms of CMS Claims: Please see section 5.2.2

5.2.3a Attach Additional Reliability Testing Results

SRR_Table-2a_Table-2b_IUR-Info_Final_508.pdf

5.2.4 Interpretation of Reliability Results

When stratified by facility size, we find that, as expected, larger facilities have greater IUR.

See Pages 2-5 of **SRR_Table 2a_Table 2b_IUR Info_Final_508.pdf** (attached to 5.2.3a) for additional information about SRR IUR.

Data Element Reliability

- The data element reliability is also quite strong with 97% of data elements in EQRS correctly matching the same elements in the medical records. Missing data and data errors in EQRS are very rare. Of note, EQRS data are a primary source for the federal ESRD Quality Incentive Program, a value-based purchasing program. This measure has been reported in the ESRD QIP for many years. In addition, both EQRS and Medicare claims are used in the federally funded ESRD registry database (United States Renal Data System) that includes all patients who are on dialysis in the US. As such, they are tested for reliability for use in these federal programs and are considered highly reliable based on that testing.

Table 2a. Accountable Entity Level Reliability Testing Results by Denominator, Target Population Size

See 5.2.3a for **SRR_Table 2a_Table 2b_IUR Info_Final_508.pdf**, which contains the table and text for this question

Table 2b. Accountable Entity Level Reliability Testing Results by Reliability Score

See 5.2.3a for **SRR_Table 2a_Table 2b_IUR Info_Final_508.pdf**, which contains the table and text for this question

5.3.1 Level(s) of Validity Testing Conducted

Person or encounter level (i.e., data element) (e.g., sensitivity and specificity), Accountable entity level (i.e., measure score) (e.g., criterion validity)

5.3.2 Type of Accountable Entity Level Validity Testing Conducted

Empirical validity testing at the accountable entity-level (e.g., criterion validity, construct validity, known groups analysis)

5.3.3 Method(s) of Validity Testing

To validate SRR, we first stratified facilities into the 'better than expected', 'as expected', and 'worse than expected' categories of SRR. Next, we calculated mean performance scores for several quality measures that are expected to be clinically associated with 30-day readmissions: Standardized Mortality Ratio (SMR), Standardized Hospitalization Ratio (SHR), Standardized Transfusion Ratio (STrR), Standardized Fistula Rate (SFR), and Long-term Catheter (LTC). We then compared mean performance scores across the three strata of 'better than expected', 'as expected', and 'worse than expected' categories for SRR.

We expect better mean performance on the above quality measures for facilities classified as 'better than/as expected' for SRR compared to facilities classified as 'worse than expected', with the exception of LTC, where lower mean performance is expected. Compared to facilities that perform 'worse than expected', facilities that perform 'better than/as expected' on SRR are likely to have more successful care coordination and other processes of care in place that may help patients avoid a readmission visit in the vulnerable period following a recent discharge.

- Standardized Mortality Ratio (SMR): We expect to observe a lower mean standardized mortality ratio for facilities in the 'better than/as expected' categories for SRR compared to facilities classified as 'worse than expected.' Patients who require acute inpatient medical care represent an at-risk population for mortality since they likely have greater acute medical needs or complications from chronic comorbid conditions that put them at higher risk for death.

- Standardized Hospitalization Ratio (SHR): We expect to observe a lower mean standardized hospitalization ratio for facilities in the 'better than/as expected' categories for SRR compared to facilities classified as 'worse than expected.' We expect this trend to be fairly strong with SHR since readmissions are also hospital admissions. Additionally, both hospitalization and readmission are a reflection of hospital utilization and increased comorbidity burden.

- STrR: We expect to observe a lower mean standardized transfusion event ratio for facilities in the 'better than/as expected' categories for SRR compared to facilities classified as 'worse than expected.' Facilities that have a lower STrR likely have processes of care in place to support robust anemia management and other care processes compared to facilities with a higher STrR.

- Vascular Access: Standardized Fistula Rate (SFR) – We expect to observe a higher mean standardized fistula rate for facilities in the 'better than/as expected' category for SRR compared to facilities classified as 'worse than expected.' Successfully creating an AVF is generally seen as representing a robust process to coordinate care outside of the dialysis facility, and potentially reduces the likelihood of adverse events, like infection that can increase the risk of patient hospitalization and hospital readmission. Facilities that do a better job at care coordination reduce the likelihood that patients will experience re-hospitalization as measured by SRR.

- Vascular Access: Long-term catheter rate (catheter in use >=3 continuous months) – We expect to observe a lower mean catheter rate for facilities in the 'better than/as expected' categories for SRR compared to facilities classified as 'worse than expected.' Long-term catheters put patients at increased risk for infection and other complications. Additionally, a high long-term catheter rate also indicates a higher patient comorbidity burden at the facility level such that sicker patients who have a long-term catheter may also be more likely to be hospitalized and re-admitted after initial hospitalization.

Data element validity

- EQRS: Some data for this measure comes from the End Stage Renal Disease Quality Reporting System (EQRS), a CMS-owned data system that collects data directly from all Medicare-certified dialysis facilities. EQRS has processes in place [1] to ensure the reliability and validity of the patient level data used for a broad array of measure calculations, including this measure. Briefly, CMS performs a random selection of 300 eligible dialysis facilities each year. Ten patient records are randomly selected from a single quarter each year from each of the facilities selected to participate. The most recent reported review included EQRS entries from April 1, 2025 to June 30, 2025. Experienced nurse reviewers assessed the data obtained from the medical records on each of 60 data elements selected from EQRS, including the dialysis modality type for the reporting month.
- Medicare Claims: UM-KECC is unable to perform validity testing on claims-based measures. However, the data elements used to specify the measure are structured, used for reimbursement, and audited. Claims data have long been considered to be valid and reliable for use in quality measurement. In addition, there are examples of CBE-endorsed measures used for public reporting that have been validated with models using chart-abstracted data for risk adjustment [2]. In general, the risk-standardized rates using the claims-based approach had a high level of agreement with results based on models using medical records, supporting the use of claim-based models for quality measurement used in public reporting.

References:

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2. Bratzler DW, Normand SL, Wang Y, O'Donnell WJ, Metersky M, Han LF, Rapp MT, Krumholz HM. An administrative claims model for profiling hospital 30-day mortality rates for pneumonia patients. PLoS One. 2011 Apr 12;6(4):e17401. doi: 10.1371/journal.pone.0017401. PMID: 21532758; PMCID: PMC3075250.

5.3.4 Validity Testing Results

See 5.3.4a for **SRR_5.3.4_Final_508.pdf**, which contains the text and table for this question

5.3.4a Attach Additional Validity Testing Results

SRR_5.3.4_Final_508.pdf

5.3.5 Interpretation of Validity Results

On average the standardized mortality ratio was 6% higher than the national average for facilities that were ‘worse than expected,’ and 7% lower than the national average (SMR = 0.93) for facilities that were ‘better than’ expected for SRR.

Facilities classified as ‘better than expected’ for SRR performed, on average, 21% better than the national average on hospitalization rates (SHR = 0.79) while those classified as ‘worse than expected’ performed, on average, 32% worse than the national average (SHR = 1.32).

On average, the standardized transfusion event ratio was 30% higher than the national average for facilities classified as ‘worse than expected’ while the ‘better than expected’ classification group of facilities were 24% lower than the national average. This suggests that facilities which have lower numbers of transfusion events likely have better processes of care in place to support robust anemia management and other care processes, thus reducing the need for re-hospitalization.

Overall, the average SFR was 58.7% in facilities classified as ‘better than expected’ and 54.43% in facilities classified as ‘worse than expected.’ The results reinforce the observation that patients with AVFs have lower risk of infection and potential need for acute care or hospitalization compared to patients with other access types, such as long-term catheter. Higher facility standardized fistula rates suggests facilities may be doing a better job at care coordination, reducing many acute care needs necessitating re-hospitalization. While the difference in fistula rates was small between facilities, this may reflect the fact that national trends in AVF rates have generally plateaued across many US dialysis facilities.

The mean LTC in facilities classified as ‘better than expected’ was 18.07% compared to facilities

classified as ‘worse than expected’ (20.45%), suggesting that facilities that have lower rates of patients dialyzing with a catheter likely have reduced infection risk and other patient comorbidity burden which, in turn, reduce the risk of readmission after initial hospitalization.

Taken together these results provide validation support for SRR. Performance on key quality measures that were expected to be related to hospital readmission was also related to facility flagging in the respective ‘better than expected’ or ‘worse than expected’ categories.

The data element validity is also quite strong with 97% of data elements in EQRS correctly matching the same elements in the medical records. Missing data and data errors in EQRS are very rare. Of note, EQRS data are a primary source for the federal ESRD Quality Incentive Program, a value-based purchasing program. This measure has been reported in the ESRD QIP for many years. In addition, both EQRS and Medicare claims are used in the federally funded ESRD registry database (United States Renal Data System) that includes all patients who are on dialysis in the US. As such, they are tested for validity for use in these federal programs and are considered highly valid based on that testing.

5.4.1 Methods Used to Address Risk Factors

Statistical risk adjustment model with risk factors

5.4.2 Conceptual Model Rationale

To estimate the probability of 30-day unplanned readmission, we use a three-stage model, the first of which is a fixed-effects logistic regression model. In this step, facility-hospital combinations are included as fixed effects, adjusting for a set of patient-level characteristics. The results of this step are estimates of the regression coefficients of patient-level characteristics in the logistic regression model. These estimates avoid issues of bias that arise through estimation of regression coefficients in a model with random effects. In particular, these estimates are unbiased regardless of correlations between hospital effects or facility effects and patient-case mix. These estimated regression coefficients are then used as an offset variable in the second stage model.

The next stage is a double random-effects logistic regression model. In this stage of the model, both dialysis facilities and hospitals are represented as random effects, and the sum of regression adjustments multiplied by estimated parameters obtained in the first stage is included as the offset variable. From this model, we obtain the estimated standard deviation of the random effects of hospitals [13].

The third stage of the model is a mixed-effects logistic regression model, in which dialysis facilities are modeled as fixed effects and hospitals are modeled as random effects, with the standard deviation specified as equal to its estimate from the second-stage model and the

estimated parameters obtained in the first stage providing an offset. The expected number of readmissions for each facility is estimated as the sum of the probabilities of readmission of all index discharges in this facility and assuming the national norm (i.e., the median) for the facility effect. This model accounts for a given facility's case mix using the same set of patient-level characteristics as those in the first model.

The model and methods are described in some additional detail below:

- To estimate the probability of 30-day unplanned readmission following an index discharge, we use a three-stage approach. The main model, which produces the estimates used to calculate SRR, takes the form:

  $$\log \{p_{ijk}/(1-p_{ijk})\} = r_i + \alpha_j + \beta^T Z_{ijk}, \quad (1)$$

  Where p_{ijk} represents the probability of an unplanned readmission for the k^{th} discharge among patients who are discharged from j^{th} hospital to the i^{th} facility, and Z_{ijk} represents the set of patient-level characteristics. Here, r_i is the fixed effect for facility and α_j is the random effect for hospital j. It is assumed that the $\alpha_j s$ arise as independent normal variables (i.e., $\alpha_j \sim N(0, \sigma^2)$).

- We then use the estimates from this model to calculate each facility's SRR:

  $$SRR_i = O_i / E_i = O_i / \Sigma_{j \epsilon H(i)} \Sigma_k \acute{P}_{ijk}, \quad (2)$$

  where, for the i^{th} facility, O_i is the number of observed unplanned readmissions, E_i is the expected number of unplanned readmissions for discharges, H(i) is the collection of indices of hospitals from which patients are discharged, and $\acute{P}_{ijk}$ is the predicted probability of unplanned readmission under the national norm for each discharge. Specifically, $\acute{P}_{ijk}$ takes the form

  $$\acute{P}_{ijk} = \exp(\check{r}_M + \check{\alpha}_j + \dot{B}^T Z_{ijk}) / \{1 + \exp(\check{r}_M + \check{\alpha}_j + \dot{B}^T Z_{ijk})\}, \quad (3)$$

  which estimates the probability that a discharge from hospital j of an individual in facility i with characteristics Z_{ijk} would result in an unplanned readmission if the facility effect

corresponded to the median of national facility effects, denoted by $\check{r}_M$. Here, $\check{\alpha}_j$ and $\dot{B}$ are estimates from model (1). The sum of these probabilities is the expected number of unplanned readmissions E_i at facility i; e.g., the number of readmissions that would have been expected in facility i had they progressed to the readmissions at the same rate as the national population of dialysis patients.

Patient-Level Risk Adjustors

As mentioned previously, the model accounts for a set of patient-level characteristics:

- Sex
- Age
- Years on dialysis
- Medicare Advantage status at discharge
- Nursing home status in past year at discharge
    - None (0 days)
    - Short term (<90 days)
    - Long term (>=90 days)
- Diabetes as cause of ESRD
- Interaction of age and diabetes as cause of ESRD
- BMI at incidence of ESRD*
    - < 18.5
    - 18.5 - 24.9
    - 25-29.9
    - 30+

      *missing included with the 30+ group
- Length (days) of index hospitalization
- Past-year comorbidities: We identify all unique ICD-10 diagnosis codes from each patient's prior year of Medicare inpatient claims. We group these diagnosis codes by diagnosis area using the v2019.1 Agency for Healthcare Research and Quality (AHRQ) Clinical Classifications Software (CCS) diagnosis categories. The CCS diagnosis categories used in calculation of the SRR are:
    - CCS 6: Hepatitis
    - CCS 10: Immunizations and screening for infectious disease
    - CCS 42: Secondary malignancies
    - CCS 50: Diabetes mellitus with complications
    - CCS 51: Other endocrine disorders
    - CCS 52: Nutritional deficiencies
    - CCS 55: Fluid and electrolyte disorders
    - CCS 59: Deficiency and other anemia
    - CCS 64: Other hematologic conditions
    - CCS 95: Other nervous system disorders
    - CCS 96: Heart valve disorders
    - CCS 97: Peri-; endo-; and myocarditis; cardiomyopathy (except that caused by

tuberculosis or sexually transmitted disease)

    - CCS 100: Acute myocardial infarction
    - CCS 101: Coronary atherosclerosis and other heart disease
    - CCS 102: Nonspecific chest pain
    - CCS 106: Cardiac dysrhythmias
    - CCS 107: Cardiac arrest and ventricular fibrillation
    - CCS 108: Congestive heart failure; nonhypertensive:
    - CCS 117: Other circulatory disease
    - CCS 118: Phlebitis; thrombophlebitis and thromboembolism
    - CCS 120: Hemorrhoids
    - CCS 121: Other diseases of veins and lymphatics
    - CCS 122: Pneumonia (except that caused by tuberculosis or sexually transmitted disease)
    - CCS 127: Chronic obstructive pulmonary disease and bronchiectasis
    - CCS 130: Pleurisy; pneumothorax; pulmonary collapse
    - CCS 131: Respiratory failure; insufficiency; arrest (adult)
    - CCS 133: Other lower respiratory disease
    - CCS 134: Other upper respiratory disease
    - CCS 135: Intestinal infection
    - CCS 138: Esophageal disorders
    - CCS 140: Gastritis and duodenitis
    - CCS 141: Other disorders of stomach and duodenum
    - CCS 151: Other liver diseases
    - CCS 152: Pancreatic disorders (not diabetes)
    - CCS 153: Gastrointestinal hemorrhage
    - CCS 154: Noninfectious gastroenteritis
    - CCS 155: Other gastrointestinal disorders
    - CCS 158: Chronic kidney disease
    - CCS 159: Urinary tract infections
    - CCS 197: Skin and subcutaneous tissue infections
    - CCS 198: Other inflammatory condition of skin
    - CCS 199: Chronic ulcer of skin
    - CCS 201: Infective arthritis and osteomyelitis (except that caused by tuberculosis or sexually transmitted disease)
- CCS 237: Complication of device; implant or graft
    - CCS 244: Other injuries and conditions due to external causes
    - CCS 251: Abdominal pain
    - CCS 253: Allergic reactions
    - CCS 255: Administrative/social admission
    - CCS 259: Residual codes; unclassified
    - CCS 651: Anxiety disorders
    - CCS 659: Schizophrenia and other psychotic disorders
    - CCS 660: Alcohol-related disorders
    - CCS 661: Substance-related disorders

- Discharged with high-risk condition: We define a *high-risk* diagnosis as any diagnosis area that was rare in our population but had a 30-day readmission rate of at least 40%. We did not include high-risk diagnosis groups related to cancer or mental health. We group these conditions using the Agency for Healthcare Research and Quality (AHRQ) Clinical Classifications Software (CCS). The CCS areas identified as high-risk are:
    - CCS 5: HIV infection
    - CCS 6: Hepatitis
    - CCS 56: Cystic fibrosis
    - CCS 57: Immunity disorders
    - CCS 61: Sickle cell anemia
    - CCS 190: Fetal distress and abnormal forces of labor
    - CCS 151: Other liver diseases
    - CCS 182: Hemorrhage during pregnancy; abruptio placenta; placenta previa
    - CCS 186: Diabetes or abnormal glucose tolerance complicating pregnancy; childbirth;
    - CCS 210: Systemic lupus erythematosus and connective tissue disorders
    - CCS 243: Poisoning by nonmedicinal substances

      or the puerperium

The list of 53 past-year comorbidity variables were selected from 233 indicators of AHRQ CCS diagnosis categories with prevalence greater than 0.1% using a score-test based sample splitting forward selection approach. In particular, the data sample is randomly split into two halves. The first half is used for fitting a first-stage fixed effects logistic regression model to select a set of comorbidity variables via a forward selection scheme using single variable score tests with 0.01 p-value cutoff and adjusting for patient-level characteristics such as age splines, sex, BMI, etc. The second half is then used to fit another first-stage model adjusting for patient-level risk factors as well as those selected variables using the first-half data sample. Single variable score tests are performed after model fitting to obtain p-values for selected variables. A common p-value of 1 is assigned to unselected variables using the first-half data sample. The steps above are repeated 50 times to generate 50 sets of p-values for all 233 variables. The 50 p-values of each variable are aggregated following Bühlmann and van de Geer and the 53 prevalent comorbidities with aggregated p-values less than 0.01 are selected.

Finally, the relationship between patient level SDS, socioeconomic disadvantage and health care utilization such as hospitalization is well-established in the general population and has received considerable attention over the years [2-6]. The likelihood of hospitalization is related to socioeconomic disadvantage through differences in health status, insurance coverage, and access to quality primary care [8, 9]. Further, individual and market or area-level measures of deprivation have been shown to contribute independently to preventable hospitalizations [20].

Health care outcomes and utilization are associated with area-level income and residential segregation, but particularly so for racial minorities [24, 25]. This suggests the interplay of patient

level (race) and area level SES factors related to lower income, neighborhood poverty, segregation, levels of educational attainment, and unemployment levels that jointly influence key health outcomes related to morbidity [1, 24, 25].

Within the dialysis population area-level SES are associated with poor outcomes [7]; while patient level factors such as race are predictive of differences in certain clinical outcomes by race [26, 28]. In a study of first year hemodialysis patients, patients of Hispanic ethnicity had lowest all-cause hospital length of stay compared to whites, while patients of black race had intermediate all-cause hospital admissions that was lower relative to whites but higher than Hispanic patient, with differences observed across certain age groups [28]. Moreover, the study authors found that infection-related hospitalizations were significantly higher for black and Hispanic patients compared to non-Hispanic whites. These associations could indicate certain facility level practices related to effective infection control and prevention may unevenly impact patients of black race and Hispanic ethnicity [28].

Insurance status is also related to health outcomes but this has not been studied extensively within the dialysis population as it relates to hospitalization, though the association has been documented in studies of the general dual Medicare and Medicaid population. Dual eligibility typically confers greater comorbidity burden and access to care barriers which in turn drives higher hospital utilization [15, 19, 27].

Given these observed linkages we tested these patient- and area-level SDS/SES variables based on the conceptual relationships as described above and demonstrated in the literature, as well as the availability of data for the analyses. In total, we tested the following variables:

Patient level:

- Sex
- Race
- Ethnicity
- Medicare dual eligible
- ZIP code level – Area Deprivation Index (ADI) from Census data (2009-2013). Based on patient zip-code. We use the publicly available Area Deprivation Index (ADI) originally developed by Singh and colleagues at the University of Wisconsin. We applied the updated ADI based on 2009-2013 census data [23]. The ADI reflects a full set of SES characteristics, including measures of income, education, and employment status, measured at the ZIP code level.

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5.4.2a Attach Conceptual Model

SRR-5.4.2a-Conceptual-Model_Final_508.pdf

5.4.3 Variable Distribution Across Measured Entities

See 5.4.3a for **SRR_5.4.3_Final_508.pdf**, which contains the table and text for this question

5.4.3a Attach Descriptive Statistics for Risk/Case-mix Variables

SRR_5.4.3_Final_508.pdf

5.4.4 Risk/Case-Mix Adjustment Modeling and/or Stratification Results

See 5.4.4a for **SRR 5.4.4_Final_508.pdf**, which contains the table and text for this question

5.4.4a Attach Risk/Case-mix Adjustment Modeling and/or Stratification Specifications

SRR-5.4.4_Final_508.pdf

5.4.5 Calibration and Discrimination

The model's ability to distinguish between patients who will and will not have a hospital readmission within 4-30 days was measured using the Area Under the Receiver Operating Characteristic (AUC) curve. The predicted AUC value is 0.683, which indicates the model has fair discriminatory power. This means the model is effective at differentiating between patients with higher and lower risk of a hospital readmission. Specifically, if a patient who was readmitted to the hospital and a patient who was not are randomly selected, the model will correctly identify which patient was readmitted 68.3% of the time.

See 5.4.5a for calibration and discrimination testing results, found in **SRR_5.4.5a_Final_508.pdf**.

5.4.5a Attach Calibration and Discrimination Testing Results

SRR_5.4.5a_Final_508.pdf

5.4.6 Interpretation of Risk/Case-mix Factor Findings

While the inclusion of some patient SES characteristics such as Hispanic, Medicare Dual Eligible, and Asian and Black race are significant, other patient SES characteristics are not (Area Deprivation Index, American Indian or Alaskan Native, and Other). Race, ethnicity, dual eligible status, and area deprivation are not included in the final risk adjusted model. Other studies have reported associations between patient-level race, ethnicity, dual eligible status, neighborhood deprivation and acute care utilization, however it is unclear whether these differences are due to underlying biological or other patient factors, or represent disparities in care. Adjusting for these social risk factors could have the unintended consequence of creating or reinforcing disparities and limiting access to care. The primary goal should be to implement quality measures that result

in the highest quality of patient care and equitable access for all patients.

5.4.7 Final Approach to Address Risk Factors

Statistical risk adjustment model with risk factors

6.1.1 Current Status

In use

6.1.2 Current or Planned Use(s)

Public Reporting, Payment Program

6.1.3 Program Details

Name of the program and sponsor
Dialysis Facility Care Compare, Centers for Medicare and Medicaid Services
URL of the program
https://medicare.gov/care-compare
Purpose of the program

Dialysis Facility Care Compare (DFCC) helps patients find detailed information about Medicare-certified dialysis facilities. They can compare the services and the quality of care that facilities provide.

Geographic area and percentage of accountable entities and patients included

United States. All Medicare-certified dialysis facilities who are eligible for the measure and have at least 11 index discharges are included in the measure calculation for the program. For the October 2024 Dialysis Facility Compare refresh, SRR results were reported for 458,111 index discharges in 7,250 U.S. dialysis facilities.

Applicable level of analysis and care setting

All Medicare-certified dialysis facilities who are eligible for the measure and have at least 11 index discharges are included in the measure calculation for the program.

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Name of the program and sponsor
ESRD QIP, Centers for Medicare and Medicaid Services
URL of the program
https://www.cms.gov/medicare/quality/end-stage-renal-disease-esrd-quality-incen...
Purpose of the program

The ESRD QIP will reduce payments to ESRD facilities that do not meet or exceed certain performance standards. The measure was added to the program for PY2017.

Geographic area and percentage of accountable entities and patients included

United States.

Patients/index discharges included: All patients/index discharges who meet the requirements to be included in the measure from included facilities. Patient counts could not be included here as they were not available in this program's public use files.

For the most recent QIP report that is publicly available (PY 2026), 7,207 facilities received a measure score.

Applicable level of analysis and care setting

All Medicare-certified dialysis facilities that are eligible for the measure and have at least 11 patient years at risk (due to public reporting requirements).

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Name of the program and sponsor
Dialysis Facility Reports, Centers for Medicare and Medicaid Services
URL of the program
https://data.cms.gov/quality-of-care/medicare-dialysis-facilities
Purpose of the program

The Dialysis Facility Reports (DFRs) are provided as a resource for characterizing selected aspects of clinical experience at this facility relative to other caregivers in this state, End Stage Renal Disease (ESRD) Network, and across the United States. Since these data could be useful in quality improvement and assurance activities, each state's surveying agency may utilize the DFRs as a resource during their survey and certification process. Measures included in the DFRs are updated annually and available to dialysis facilities to review and submit comments prior to their release to State Survey Agencies and Regional Offices in September of each year.

Geographic area and percentage of accountable entities and patients included

United States. All Medicare-certified dialysis facilities who are eligible for the measure and have at least 11 index discharges are included in the measure calculation for the program. For the FY 2025 Dialysis Facility Reports, SRR results were reported for 458,111 index discharges in 7,250 U.S. dialysis facilities.

Applicable level of analysis and care setting

Facility level, Dialysis Facilities

6.1.4 Attributes for Accountability Use

This measure is best suited for an accountability program that focuses on End Stage Renal Disease (ESRD) patients. Specifically, ESRD patients with Medicare coverage (either traditional Medicare or a Medicare Advantage Plan) would be the target population. Programs that focus on the dialysis facility as the accountable entity are ideal, as opposed to programs that focus on the Nephrologist or provider. As such, this is an outpatient measure with limited adjustments for social risk factors. However, additional adjustments could be made at the program level based on the needs or design of the program.

6.2.1 Actions of Measured Entities to Improve Performance

There are a number of actions that dialysis facility providers can take to help manage high risk patients and avoid preventable readmissions. Examples include:

- Optimize fluid management: Evaluation of the target weight after hospital discharge is important to avoid fluid related re-admissions. Encouraging patients to complete the full duration of their treatments along with not missing treatments (or rescheduling missed treatments) can be helpful in achieving optimal target weight.
- Medication reconciliation: this is especially important to avoid medication related adverse events.
- Education: Deliver education to patients about when to obtain hospital care vs. care at facility or by other providers and who to contact if questions arise between treatments.
- Coordination of care: facility staff can help ensure that follow up appointments are arranged post-discharge
- Anemia Management: appropriate use of erythrocyte stimulating agents can avoid the need for hospitalization for red blood cell transfusion.

These processes are directly tied to the required credentials and training facilities must have per the Conditions for Coverage and to be certified and in good standing with Medicare.

6.2.2 Feedback on Measure Performance

For DFCC, feedback can be provided any time through contacting the dialysisdata.org helpdesk. Preview periods allow for specific times for facilities to review and comment on measure calculations and provide an opportunity to request a list of patients included in the measure calculation.

Comments received during DFCC preview periods tend to be technical in nature, asking for clarification on how the SRR is calculated for particular facilities, including questions about patient assignment and application of risk adjustment criteria.

6.2.3 Consideration of Measure Feedback

Below we have explained our response to the common questions we noted above.

Several comments questioned the use of both SHR and SRR which could doubly penalize facilities since a readmission would count in both the SHR and SRR measures. While the SHR and SRR may both count the same hospitalization event, we believe this is appropriate because it places additional emphasis on the importance of avoiding hospitalizations and, separately, re-hospitalization for dialysis patients. Doing so can help reduce this major cost driver as well as promote better patient health-related quality of life. In addition, while the SRR and SHR are moderately correlated with one another, it is possible for a facility to score relatively well on one measure, and relatively poorly on the other. We also believe that the measures capture distinct aspects of the quality of care provided by a dialysis facility. The SRR assesses the coordination of care during transitions as dialysis patients are discharged from an acute care hospital into the care of a dialysis facility, and the SHR evaluates the facility's overall performance in reducing hospitalizations.

Based on enrollment information from the Medicare Enrollment Database (EDB), the percentage of ESRD dialysis beneficiaries enrolled in Medicare Advantage (MA) has steadily increased over time. From 12% in 2010, the proportion rose to 22% by 2020. Prior to 2020, there was an annual increase of approximately 1%. However, since 2021, the annual increase has been more than 5%.

The growth in ESRD beneficiaries joining MA plans carries significant implications for the metrics used to assess dialysis facility performance. Contrary to the data from Fee-For-Service (FFS) Medicare beneficiaries, MA outpatient encounters and administrative records have not been readily available for the purposes of analyzing facility quality, except for internal CMS use in risk adjustment and performance assessment.

6.2.4 Progress on Improvement

See 7.1 Supplemental Attachment section for **SRR_6.2.4_Final_508.pdf**, which contains the table and text for this question

6.2.5 Unexpected Findings

None

6.2.5a Potential Unintended Consequences

None

7.1 Supplemental Attachment

SRR_7.1-Supplemental-Attachment.zip

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The measure developer is different from the measure steward

Yes

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