

ESRD Prospective Payment System (ESRD PPS)

Overview of 2011 - 2014 Claims-Based Monitoring Program

Since the implementation of the ESRD PPS in January 2011, CMS has monitored outcomes for Original Medicare beneficiaries receiving outpatient maintenance dialysis. This document describes several key trends from 2011 to 2014.

From 2011 to date, CMS has monitored usage rates for ESRD-related drugs, biologicals, and related procedures. CMS has also tracked general health outcomes such as mortality rates, hospitalizations, and emergency department visits, as well as several ESRD-specific health concerns including cardiovascular morbidity, vascular access complications, bone and mineral management, and fluid management.

While the ESRD PPS impacted utilization of certain ESRD-related services and procedures, no sustained changes in beneficiary health status were observed from January 2011 to March 2014. Specific key findings are summarized throughout the document, organized by topic.

For each outcome, monthly data is presented for the year prior to the implementation of the ESRD PPS and for each month from January 2011 to March 2014. The baseline year allows the separation of historical trends from changes that could be related to the new payment system.

Introduction

Folder Name: ESRD_PPS_Public_Release_File_Q1_2014

Upload Date: 8/08/2014

Observation Period: 1/1/2010 to 03/31/2014

Claims Processed Through: 6/27/2014

Beneficiary Enrollment Through: 5/31/2014

Data Types: Original Medicare (Part A and Part B) Claims; Prescription Drug (Part D); Medicare Enrollment Data

Objective: Summary of outcomes in the ESRD Population in CY 2011- CY 2014 Q1

Purpose: To summarize beneficiary health outcomes and utilization rates among the Original Medicare ESRD population (aged 18 years and older) in 2011 to 2014 Q1.

The key findings are organized by the following topic areas: General Mortality & Morbidity; Anemia Management; Vascular Access; Home Dialysis, Training, & Onset; Bone & Mineral Management; and Fluid Management.

Specifications

Study Population

- ESRD Population: All persons who were enrolled in Medicare A/B FFS during the month of observation AND had 1 or more 'type 72x' claims in the month. If a beneficiary died in a given month and had no 72x claim, the beneficiary was in the population if he or she had a 72x claim in the prior month of observation. This workbook presents results for the adult ESRD population (beneficiaries 18 years and older).

Outcome Definitions

General Mortality & Morbidity

- Death: As observed in the Medicare Enrollment Database
- Hospitalization: As indicated by the service date of Inpatient (IP) claim
- ED: As indicated by the service date of Outpatient (OP) claim with emergency room flag
- Skilled Nursing Facility (SNF): As indicated by the service date of Skilled Nursing (SN) claim

Anemia Management

- ESAs and Transfusions: As indicated by the relevant procedure code, national drug code, or ICD-9 CM diagnosis code. For the list of codes used to define each outcome, please refer to Codes_Anemia_Mgmt_ESA.csv and Codes_Anemia_Mgmt_Transfusion.csv.
- Hemoglobin Levels: As indicated on Medicare A/B FFS claims, including 'type 72x' claims, for ESA-treated beneficiaries in the ESRD population. In cases where hematocrit was reported instead of hemoglobin, the value was converted by dividing the hematocrit by a conversion factor of 3.
- Stroke, Heart Failure, and AMI: As indicated by the relevant ICD-9 CM diagnosis code, limited to the first and second positions on the claim form for AMI, and the first position for stroke and heart failure. For the list of codes used to define each outcome, please refer to Codes_Anemia_Mgmt_Stroke.csv, Codes_Anemia_Mgmt_Heart_Failure.csv, and Codes_Anemia_Mgmt_AMI.csv.

Vascular Access

- Vascular Access Complication: As indicated by the ICD-9 CM diagnosis code. For the list of codes, please refer to Codes_Vascular_Access.csv.

Home Dialysis, Training, & Onset

- Home Dialysis: As indicated by the procedure code or related condition code. For the list of codes, please refer to Codes_Home_Dialysis.csv.
- Training: As indicated by the related condition code "73".
- Onset Period: The four months following the most recent dialysis start date listed in the Medicare Enrollment Database.

Bone & Mineral Management

- Fracture and Kidney Stones: As indicated by the relevant procedure code or ICD-9 CM diagnosis code. For the list of codes used to define each outcome, please refer to Codes_Bone_Mineral_Mgmt_Fracture.csv and Codes_Bone_Mineral_Mgmt_Kidney_Stones.csv.
- Peptic Ulcer: As indicated by the relevant ICD-9 CM diagnosis code (533) on non-72x claims only.

Bone & Mineral Management

- Chronic Heart Failure (CHF), Fluid Overload, and Dehydration: As indicated by the ICD-9 CM diagnosis code, limited to the first nine positions on the claim form. For the list of codes, please refer to Codes_Fluid_Mgmt.csv.

General Mortality & Morbidity

General mortality and morbidity outcomes are presented in this section as one overarching measure of ESRD beneficiary health status under the ESRD PPS. Beneficiary morbidity, here taken to mean the general health status of the beneficiary, was assessed by monitoring beneficiary hospitalization, emergency department visits, and skilled nursing facility use.

The monitoring program found a slight declining trend in monthly mortality rates from 2010 to 2014 Q1. With the exception of ED rates, utilization rates of acute care settings also declined slightly or were constant in 2011-2014 Q1 compared to 2010. In contrast, average monthly ED rates increased slightly in 2013, rising from 10.7% in 2012 to 10.9%.

It is important to note that mortality and morbidity rates generally display seasonal trends. The first quarter of each year typically has elevated rates of mortality and morbidity; however, the trends generally mirror past seasons.

Anemia Management

This section presents findings on ESA and blood transfusion utilization, median hemoglobin levels, and the incidence of cardiovascular events (stroke, heart failure, and acute myocardial infarctions) in the ESRD population.

In the six months leading up to January 2011, there was a decrease in the percent of ESRD beneficiaries that received one or more ESAs. A second downward trend began in July 2011. Near the end of 2011, approximately 84% of ESRD beneficiaries received at least one ESA per month, compared to 91.5% in July 2010. In 2012, the decline in ESA utilization continued, from 84.6% in January 2012 to 81.2% in December. ESA utilization rates have remained lowered near 81% through 2013 and the first quarter of 2014.

The percent of the ESRD population that received blood transfusions increased in 2011. Transfusion rates fluctuated between 2.5% and 3.0% in 2010, but increased to 3.3% in January 2011. Transfusion rates continued to climb, reaching 3.6% in late 2011 and early 2012 before declining to a monthly average of 3.1% in the last half of 2013 and 2014 Q1.

Median hemoglobin levels for the ESA-treated ESRD population declined from 2009 to mid-2012, with the sharpest declines occurring in 2011. Median hemoglobin levels averaged 11.4 gm/dL in 2010. After a steady decline, median levels from mid-2012 to date have remained constant at around 10.5-10.6 gm/dL.

Finally, though anemia treatment patterns changed throughout the monitoring period, the cumulative percent of beneficiaries experiencing stroke and heart failure declined each year from 2007 through 2014 Q1. These declines were gradual and did not correspond with the implementation of the ESRD PPS. In contrast, cumulative rates of acute myocardial infarctions (AMI) in the 2011 cohort were initially higher than 2007-2010. However, AMI rates in the 2012 - 2014 cohorts are consistent with or slightly lower than rates in the 2007-2010 cohorts.

Note: In this section, heart failure was defined using diagnoses in the first diagnosis position on the claim form, while heart failure in the Fluid Management section was defined using diagnoses in the first nine positions. Additionally, the diagnosis codes used to identify heart failure vary slightly between sections. Therefore, the resulting rates will differ.

Note: Unlike the other outcomes presented, the “Stroke”, “Heart Disease”, and “AMI” data are cumulative. Each CSV file follows eight cohorts comprised of beneficiaries undergoing outpatient maintenance dialysis in January of 2007-2014. Downward trends are indicated if the rates for a particular cohort are lower than the cohorts from past Januarys. Similarly, upward trends are indicated if the rates for a particular cohort are higher than cohorts from past Januarys. The beneficiary cohorts were not adjusted for underlying differences in health status or treatment patterns.

Vascular Access

Vascular access complications were monitored in the ESRD population; the results are presented in this section.

The percent of ESRD beneficiaries with vascular access complications averaged 15.4% in 2010. Rates have declined slightly in the following years. Average monthly rates were 15.3% in 2011, 15.0% in 2012, and 14.7% in 2013, and 14.3% in 2014 Q1. This suggests that there was no change in this beneficiary health outcome corresponding with the implementation of the ESRD PPS.

Home Dialysis, Training, & the Onset of Dialysis

This section presents data on the utilization of home dialysis. It also investigates rates of home dialysis training and the subsequent utilization of home dialysis among onset and non-onset beneficiaries in the ESRD population. Onset is defined as the first four months of dialysis treatment.

The percent of ESRD beneficiaries utilizing home dialysis steadily increased from a monthly average of 8.3% in 2010 to 8.9% in 2011, 9.5% in 2012, 10.1% in 2013, and 10.3% in 2014 Q1. This trend started prior to 2011 and did not change with the implementation of the ESRD PPS.

Data also revealed that beneficiaries in onset undergo home dialysis training and transition to home dialysis at rates that are higher than rates among the non-onset population.

Note: Since the Training & Home Dialysis analysis looks three months into the future, data is provided through December 2013 rather than March 2014. ESRD beneficiaries must be enrolled in the current month and the next 3 months.

Bone & Mineral Management

Beneficiary outcomes related to bone and mineral metabolism, primarily the incidence of fractures, kidney stones, and peptic ulcers, are presented in this section.

The monitoring program found no increase in adverse health conditions related to bone and mineral management with the implementation of the ESRD PPS. The average monthly incidence rate of fractures was 2.1% in 2010 and remained at or below these levels in 2011 and onward. The percent of ESRD beneficiaries with kidney stones has increased very slightly from 2010 to date, from a monthly average of 0.39% in 2010 to 0.44% in 2013 and 0.43% in 2014 Q1. Finally, the incidence of peptic ulcers remained between 0.02%-0.03% per month for the entire four-year monitoring period.

Fluid Management

The impact of the ESRD PPS on the incidence of fluid management diagnoses – specifically congestive heart failure (CHF), fluid overload, and dehydration – is discussed in this section.

The percent of ESRD beneficiaries with CHF and dehydration diagnoses in 2011-2013 declined slightly or was consistent with historical trends. On average, 12.7% of ESRD beneficiaries had a diagnosis for CHF per month in 2010, compared to 12.6% per month in 2011, 12.3% per month in 2012, and 12.0% per month in 2013 and 2014 Q1. There was also a decline in the percent of ESRD beneficiaries with a dehydration diagnosis. This decline was a longer-term trend, dating back to the beginning of the monitoring period.

Finally, the percent of ESRD beneficiaries with a diagnosis of fluid overload increased slightly in 2013. In an average month in 2010, 5.5% of beneficiaries had a fluid overload diagnosis, compared to 5.3% in 2011, 5.5% in 2012, and 5.9% in 2013, and 6.3% in 2014 Q1.

Note: In this section, heart failure was defined using diagnoses in the first nine positions on the claim form, while heart failure in the Anemia Management section was defined using diagnoses in the first position. Additionally, the diagnosis codes used to identify heart failure vary slightly between sections. Therefore, the resulting rates will differ.