

A Comparative Analysis of Transfusion Trends Between Types of Providers of Dialysis Services Using Medicare Claims Data

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Introduction

Given the recent changes that occurred to the erythropoiesis-stimulating agent (ESA) label in June of 2011,¹ there has been an increased focus on the number of transfusions that have taken place in patients with end-stage renal disease (ESRD). As a result, hemoglobin (Hb) concentrations in dialysis patients have fallen, and patients with risk factors such as gastrointestinal bleeds, myelodysplasia, and other chronic conditions may be at a higher risk for transfusions. While transfusions are not routinely administered in the outpatient setting, anemia management in the outpatient setting may have an effect on inpatient transfusion rates. Little is known, however, about the rates of transfusions among different provider types prior to the label change.

Objective

The objective of this comparative analysis was to determine the location of ESRD-related transfusion events and variations in transfusion practice patterns among provider types within the 2 years prior to the June 2011 ESA label change.

Results

In 2009 and 2010, non-profit facilities and for-profit facilities had similar percentages of prevalent ESRD patients who received 1 or more inpatient blood product administrations (Table 2).

The lowest percentage of prevalent ESRD patients who received 1 or more outpatient blood product administrations were reported at non-profit facilities at 5.5% in 2009 and 5.4% in 2010 (Table 2).

Table 2. 2009–2010 ESRD Prevalent Inpatient Blood Product Use and Outpatient Blood Transfusions and Blood Product Use in the Outpatient Hospital

	≥ 1 Inpatient Blood Product Administration, %		≥ 1 Outpatient Transfusion Code, %		≥ 1 Outpatient Blood Product Administration, %	
Facility Type	2009	2010	2009	2010	2009	2010
All dialysis facilities	25.8	25.3	3.4	3.5	6.1	5.9
Nonprofit facilities	25.7	25.3	3.2	3.3	8.0	7.8
For-profit facilities	25.9	25.3	3.4	3.5	5.5	5.4
Hospital-based units	29.3	28.3	4.4	5.0	12.1	12.0
Other freestanding facilities	27.2	26.8	3.5	3.7	6.8	6.8

Abbreviations: ESRD, end-stage renal disease

Hospital-based units reported the highest percentages of patient administrations: prevalent ESRD patients who received 1 or more inpatient blood product administrations; outpatient transfusion codes and outpatient blood product administrations; and transfusion codes on a dialysis claim and administrations of a dialysis claim (Tables 2–3).

Table 3. 2009–2010 Blood Transfusions and Blood Products in the Dialysis Facility

	Prevalent ESRD Patients with ≥ 1 Outpatient Transfusion Codes on a Dialysis Claim, %		Prevalent ESRD Patients with ≥ 1 Outpatient Blood Product Administrations on a Dialysis Claim, %	
Facility Type	2009	2010	2009	2010
All dialysis facilities	0.1	0.1	1.2	1.1
Non-profit facilities	0.2	0.2	2.8	2.5
For-profit facilities	0.0	0.0	0.4	0.3
Hospital-based units	0.7	1.1	5.7	5.5
Other freestanding facilities	0.1	0.1	1.3	1.2

Abbreviations: ESRD, end-stage renal disease

Methods

Table 1. 2009–2010 Number of Dialysis Units Categorized by Facility Type

Facility Type	Number of Dialysis Units
All dialysis facilities	5,642
Nonprofit facilities	943
For-profit facilities	4,691
Hospital-based units	560
Other freestanding facilities	5,082

Population and Provider Groups

Prevalent ESRD patients were identified from the 2009 and 2010 Medicare Standard Analytic Files (SAFs). Patients were identified as having received dialysis services at non-profit, for-profit, hospital-based, or freestanding dialysis facilities based on the provider numbers from dialysis claims. Beneficiaries who had not been on dialysis for at least 3 months and patients who were unavailable for follow-up were excluded from the analysis.

Patients were grouped by provider type based on where they received treatment during the calendar year. Patients seen at multiple providers were counted once with each applicable provider subgroup. These providers were classified based upon their Medicare provider number and public records of provider-profit status.

Patient data was analyzed to compare transfusion trends among different provider types in the 2 years prior to the ESA label change. Inpatient hospital and dialysis facility blood transfusions were identified using the presence of blood revenue codes. Outpatient hospital blood transfusions were identified using the presence of blood product revenue codes and transfusion procedure codes. The outpatient SAF includes 100% of fee-for-service Medicare beneficiaries.

Vascular Access

For inpatient SAFs, it is not possible to separate blood product use for transfusions from blood product use for other purposes. Therefore, in the inpatient setting, patients were identified as having received 1 or more blood product administrations using blood product revenue center codes.

Patients were identified as having received 1 or more blood product administrations in the outpatient setting using transfusion procedure codes and blood product revenue center codes.

Patients were identified as having received 1 or more blood product administrations in a dialysis facility using transfusion procedure codes and blood product revenue center codes on dialysis claims.

Conclusions

- Overall, most transfusions analyzed occurred in the hospital setting.
- Transfusions in the dialysis facility were rare, but did occur in some non-profit and freestanding facilities.
- Patients in hospital-based facilities and non-profit facilities had the highest rates of transfusions compared with those in for-profit facilities in 2009 and 2010.
- There was a slight decrease in use of transfusions in 2010 compared with 2009.
- These data reflect anemia management practice patterns prior to the June 2011 ESA label change, and, therefore, the data serve as a baseline for future work reflective of the current treatment paradigms.

References

 FDA Drug Safety Communication: Modified dosing recommendations to improve the safe use of Erythropoiesis-Stimulating Agents (ESAs) in chronic kidney disease. 2011 http://www.fda.gov/drugs/drugsafety/ucm259639.htm. Accessed 5 October 2012.

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