Dialysis Facility-Level Transfusion Rates Can Be Unreliable Due to Variability in Hospital-Level Billing Patterns for Blood

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Introduction
The standardized transfusion ratio (STR) is currently reported by Dialysis Facility Compare (DFC) and will become part of the End-Stage Renal Disease (ESRD) Quality Incentive Program (QIP) for secular trends in quality estimation of hospitalization.

Methods

- Medicare beneficiaries undergoing chronic dialysis in either 2011 or 2012 were identified from the Centers for Medicare & Medicaid Services (CMS) Standard Analytical Files (SAFs).
- Among such patients, we queried Part A claims for hospitalizations with an associated discharge date that included a procedure code for “transfusion of blood and blood components” (ICD-9-CM procedure code 99.0x).
- Medicare revenue center code(s) for “transfusion of blood and blood components (WB) or red blood cell transfusion (RBC)” were recorded for the purpose of collecting blood furnished,” which may be recorded for the purpose of collecting the blood deductible.

- We aimed to describe variability of billing patterns for blood among hospitalized dialysis patients.

Results

- We identified 307,174 ABB between January 1, 2011, and December 31, 2012.
- Nearly 63% of ABB indicated WB or RBC transfusion, 4% indicated transfusion of other blood components, and more than 12% indicated transfusion of unspecified components.
- Over 21% of ABB included no code that explicitly indicated the occurrence of non-WB, non-RBC transfusion.
- Monthly percentages of ABB with codes for blood processing alone declined modestly during the study era.

- In states (n = 39) with >1000 ABB:
  - Percentages of WB or RBC transfusion ranged from 47% (Pennsylvania) to 80% (Nebraska).
  - Percentages of ABB with codes for blood processing alone ranged from 7% (Mississippi) to 80% (Hawaii).
- We identified 2,756 hospitals with ABB in Medicare Parts A and B claims.

Conclusions

- The incidence of whole blood or red blood cell transfusion among hospitalized dialysis patients is uncertain, on the basis of data ascertained from Medicare claims.
- Uncertainty is primarily due to frequent coding of blood processing without evidence of transfusion.
- Between-hospital variability in billing patterns for blood was substantial.
- Specific definitions of whole blood or red blood cell transfusion may overstate the incidence of such transfusion.
- Specific definitions of whole blood or red blood cell transfusion will understate the incidence of such transfusion in dialysis facility populations that reside near hospitals that use non-specific coding.
- Use of specific definitions will induce differential misclassification according to location, resulting in biased estimation of STR.
- To improve the face validity of STR, CMS should require hospitals to document transfusion in a consistent manner.
- In the absence of such a mandate, multicenter validation studies of hospital billing for blood are needed.
- Even without validation studies, methods for estimation of STR should exclude the occurrence of non-whole blood, non-red blood cell transfusion (e.g., plasma transfusion).