

Achievement of K/DOQI target hemoglobin levels at chronic dialysis initiation in pediatric patients, by race, gender, & year

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Introduction

- Anemia is common in patients with chronic kidney disease (CKD), and increases in incidence in patients with a glomerular filtration rate (GFR) < 60 mL/min (stage 3 CKD). Almost all patients with Stage 5 CKD (GFR < 15 mL/min) have anemia.
- The 2000 Kidney Dialysis Outcomes and Quality Initiative (K/DOQI) guidelines recommended correcting hemoglobin (Hgb) levels to a target level of 11 to 12 g/dL in pediatric patients with Stage 5 CKD.
- Anemia correction improves quality of life, cardiac dysfunction, and exercise tolerance in pediatric (< 20 years of age) patients with Stage 5 CKD.
- We studied, by race and gender, the percentage of pediatric patients meeting a target Hgb level of 11 g/dL in the incident U.S. Medicare population starting dialysis from 1995 to 2004.

Methods

- Using data from the United States Renal Data System, we looked at U.S. Medicare incident patients starting dialysis 1995 to 2004 and reaching day 91 of Stage 5 CKD between January 1 and December 31 of the year.
- We used the 2000 KDOQI anemia guidelines to define anemia as a Hgb level < 11.0 g/dL. Hemoglobin values were calculated by dividing the hematocrit value by three.
- Demographic data—including age, gender, race, and primary cause of Stage 5 CKD—were obtained from the Identification and Medical Evidence sections of the Renal Beneficiary Utilization System of the Centers for Medicare and Medicaid Services, filed between May 1995 and June 2006. Data on Hgb levels were obtained from institutional outpatient Medicare claims.

Results

- Sample sizes ranged from 490 to 1,079 patients/year (see Table 1).
- The percentage of patients who met the K/DOQI target at dialysis initiation increased overall from 15% in 1995 to 26% in 2004 (Figure 1, $p=0.0001$), from 15% in 1995 to 26.5% in 2004 for white patients ($p = 0.0001$), and from 14.4% in 1995 to 24.5% in 2004 for black patients ($p=0.0001$).
- Black patients lagged behind white patients (30.8% in whites vs. 25.1% in blacks for 2004), and females behind males (32.0% in males vs. 23.9% in males for 2004).

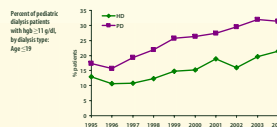
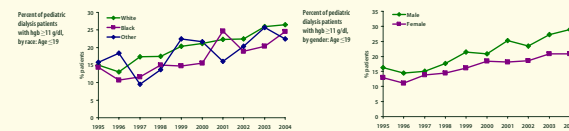


Table 1
Percentage of patients with Hgb level < 11 g/dL at dialysis initiation, by year, race, and gender

Year	White		Black	Other	Male		Female		ND	FD	All
	N	%	N	%	N	%	N	%	N	N	%
1995	490	14.95	14.39	15.79	16.31	12.98	12.82	17.25	14.9		
1996	794	15.05	16.86	16.37	16.41	11.14	16.61	15.68	13.97		
1997	745	17.31	11.81	9.52	15.08	13.9	16.82	16.38	14.5		
1998	780	17.42	15.04	13.68	17.72	14.4	12.26	21.97	16.15		
1999	888	20.41	14.72	22.47	21.44	16.97	14.79	25.74	19.92		
2000	938	21.18	14.48	21.71	20.84	16.45	15.15	26.33	19.72		
2001	911	22.28	24.71	16.65	22.28	16.85	16.86	27.45	22.08		
2002	1,006	22.37	18.89	26.31	23.43	16.33	15.99	28.46	21.17		
2003	1,041	26.01	20.39	25.66	27.18	20.92	19.63	31.88	26.3		
2004	1,079	26.5	24.52	23.5	28.94	26.91	21.44	31.26	25.49		

Conclusions

- The percentage of pediatric incident U.S. Medicare dialysis patients meeting a target Hgb level of 11.0 g/dL at dialysis initiation increased between 1995 to 2004. Racial and gender differences, however, were consistently present.
- More emphasis is needed for pre-Stage 5 CKD anemia treatment in the pediatric population.