

Rehospitalizations among Elderly Chronic Kidney Disease Patients

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Introduction

- The reduction of rehospitalizations (rehosp) among Medicare beneficiaries remains a current public policy objective.
- Previous studies have shown high re hosp rates among general Medicare and hemodialysis patients: respectively, nearly one fifth and over one third of hospital discharges were followed by a 30-day re hosp.
- However, current re hosp rates among the chronic kidney disease (CKD) population have not been analyzed.

Methods

- Rehosp rates were calculated among prevalent Medicare CKD patients on January 1, 2010, age 66 and older on December 31, 2009, using the 5% Medicare sample.
- During 2009, CKD stage was defined and patients were continuously enrolled in Medicare parts A and B without HMO coverage. Patients with ESRD were analyzed separately.

- Data included live all-cause hospital discharges from January 1 to December 1, 2010, and patients with at least one discharge were included.
- Data excluded rehabilitation claims, transfers, and discharges with a same-day admission to long-term care and critical access hospitals.
- Events were first re hosp and/or mortality. Rates indicated the percent of live discharges with an event within 30 days.
- Annual rehosp rates were adjusted for age, gender, and race using direct adjustment with all included discharges in 2005 as the reference.

Results

- Results included 63,031 discharges from 34,862 CKD patients. Patients age 75-84 represented 42.6% of the cohort while 57.1% had only one discharge (Table 1).

- Rehosp rates within 30 days among CKD patients were 24% compared to 18 and 34% for non-CKD and ESRD, respectively, and those for death or rehosp were 30% compared to 22 and 39% (Fig. 1).
- Rates increased with CKD severity: rehosp rates in CKD stages 4-5 were 26% compared to 23% in CKD stages 1-2 (Fig. 2).
- The rehosp rate among CKD patients (24%) even exceeded the rate of the combined endpoint of death or rehosp (22%) among non-CKD patients (Fig. 2).
- Rehosp appears to decrease as mortality increases with older age among CKD patients (Fig. 3).
- Among CKD patients, rehosp rates were highest among non-white races (27-28%). Mortality, however, was slightly lower among non-whites (7% versus 9% among whites; Fig. 4).
- Adjusted rehosp rates among CKD patients decreased only slightly from 27% in 2002 to 24% in 2010 (Fig. 5).

Table 1

Characteristic	Value	CKD stage	Value	Value
Age	66-69	11.0	S85.1-2	7.5
	70-74	17.3	S85.3	34.5
	75-84	42.6	S85.4-5	13.5
	85+	29.0	S85.9/unknown	44.5
Gender	male	46.8	Total hospital discharges	57.1
	female	53.2		1
Race	white	83.8		23.3
	black	11.4		3
	other	4.7		10.2
			5+	4.5

Figure 2
 All-cause rehospitalization or death within 30 days after live hospital discharge, by CKD stage, age 66+, 2010

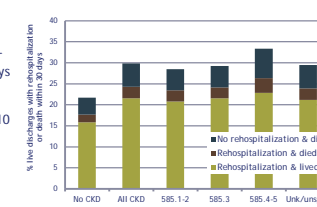


Figure 4
 All-cause rehospitalization or death within 30 days after live hospital discharge, by race and CKD status, age 66+, 2010

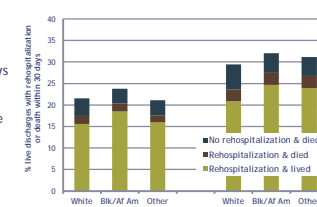


Figure 1

All-cause rehospitalization or death within 30 days after live hospital discharge, in the general Medicare (no CKD), CKD, and ESRD populations, age 66+, 2010

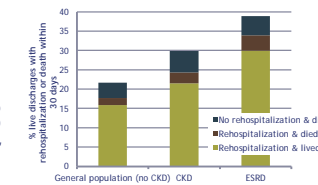


Figure 3

All-cause rehospitalization or death within 30 days after live hospital discharge, by age and CKD status, age 66+, 2010

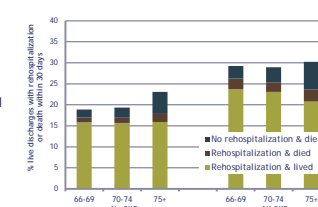
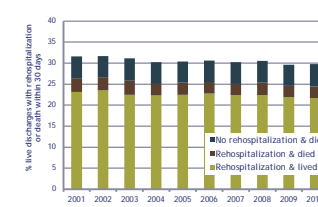


Figure 5

Adjusted all-cause rehospitalization or death within 30 days after live hospital discharge in CKD patients, age 66+



Conclusions

- Nearly one in four hospital discharges among CKD patients were followed by a 30-day re hosp, and rates improved minimally in the last decade.
- The association between lower rehosp and higher mortality, as observed for racial and age trends, illustrates the issue of the competing risk of mortality. Rehosp rates need to be interpreted with caution due to competing risks as death precludes the opportunity for readmission.
- However, the observed overall association between elevated rehosp rates and CKD status persisted despite influence of competing risk. Rehosp rates among CKD patients were higher than even the combined endpoint of rehosp/death among non-CKD patients.
- Findings support rehosp reduction efforts among CKD in addition to ESRD populations.