

Trends In Hospitalization, Emergency Dept. Encounters, and Observation Stays In Prevalent Hemodialysis Patients

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Introduction

- Hospitalization rates continue to decrease for prevalent Medicare hemodialysis (HD) patients, while rates of emergency department encounters (EDE) and observation stays (OBS) have increased.
- We examined concurrent trends of these acute interactions with the healthcare system in prevalent HD patients.

Methods

- Using CMS ESRD data from 2004-2013, we computed unadjusted hospitalization, EDE and OBS rates, overall, and with cardiovascular or infection primary diagnosis codes.
- Yearly cohorts from 2004 to 2013 were created, comprising patients who were on dialysis and covered by Medicare Part A on January 1 of that year.
- Prevalent patients were followed from January 1 to the earliest of death, transplant, loss of Medicare coverage, or year's end.

Results

- The number of prevalent patients increased, from 249,439 in 2004 to 374,971 in 2013, with increases over time in the proportions of older patients and patients with longer dialysis duration (Table 1).
- Hospitalizations declined from 206 to 164 per 100 pt-years, while EDE/OBS rates increased, from 166 in 2004 to 210 per 100 pt-years by the end of 2013 (Figure 1).
- The combined burden of hospitalizations or EDE/OBS was relatively constant until 2011, but declined slightly thereafter, reaching 350 per 100 pt-years in 2013.
- Patterns were similar for incident patients, but EDE/OBS were approximately 13% higher, and hospitalizations 24% higher.
- Cause-specific patterns differed for cardiovascular vs. infection as primary diagnosis:
 - CVD EDE/OBS visits increased 45% between 2004 and 2013, while infection EDE/OBS visits increased 23%.
 - CVD hospitalizations decreased 36%, while infection hospitalizations decreased 20%.

Table 1. Patient Characteristics

	2004	2007	2010	2013
N	249,439	284,713	319,203	374,971
Age category (%)				
18-44 yrs	15.77	15.04	14.55	13.69
45-64 yrs	39.87	41.13	42.46	42.19
65-79 yrs	33.82	32.54	31.54	32.57
80+ yrs	10.54	11.30	11.46	11.56
Gender (%)				
Male	53.03	53.89	54.59	55.35
Female	46.97	46.11	45.41	44.65
Race (%)				
White	53.92	54.45	54.53	54.66
Black	39.32	38.51	38.36	37.88
Asian	4.04	4.58	5.03	5.52
Other/Unknown	2.72	2.46	2.07	1.94
Primary cause of ESRD (%)				
Diabetes	42.36	43.34	43.87	44.56
Hypertension	29.37	28.99	29.18	29.58
Glomerulonephritis	12.04	11.02	10.19	9.40
Cystic Kidney	2.74	2.72	2.71	2.57
Other	10.15	10.35	10.48	10.25
Unknown/Missing	3.34	3.57	3.58	3.64
Vintage (%)				
<2 yrs	39.37	38.05	35.82	33.33
2-<5 yrs	35.02	34.56	34.63	34.69
5+ yrs	25.60	27.39	29.54	31.98

Figure 1. All-Cause Rates of Emergency Department Encounters/Observation Stays Compared to Hospitalizations
Prevalent Patients, 2004 to 2013

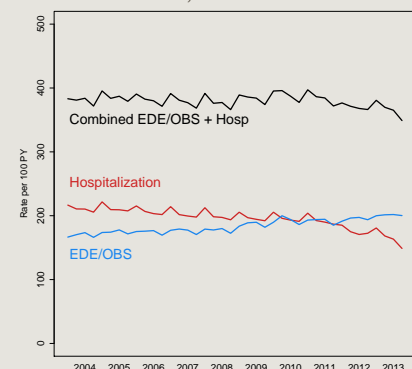


Figure 2. All-Cause Rates of Emergency Department Encounters/Observation Stays Compared to Hospitalizations
Incident Patients, 2003 to 2012

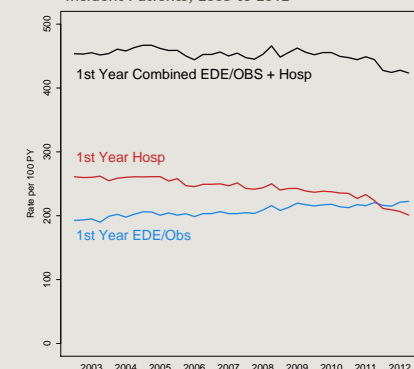
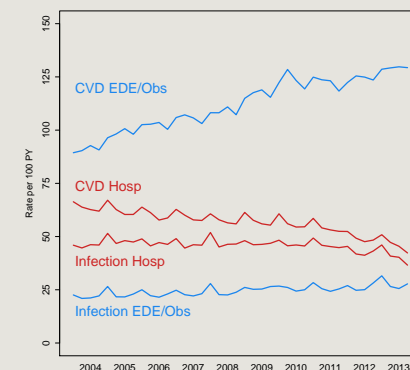


Figure 2. CVD and Infection Rates of Emergency Department Encounters/Observation Stays Compared to Hospitalizations
Prevalent Patients, 2004 to 2013



Conclusions

- EDE/OBS rates have now exceeded hospitalization rates, and decreases in hospitalizations have been mostly offset by increases in EDE/OBS.
- These patterns are seen among both incident and prevalent patients.
- The combined acute interactions with the healthcare system are almost 4 per patient per year.
- The consequences of this change on long-term patient outcomes is unknown.

