TABLE E-1 Patient Factors Associated with Intramedullary Nail Use: Results from the Surgeon Random Intercepts Model*

Covariate	Odds Ratio†	95% Confidence Interval for Odds Ratio
Age		
65-74 yr‡	1.00	–
75-84 yr	0.92	0.86-0.99
≥85 yr	**0.89**	0.84-0.96
Sex		
Male	**1.08**	1.03-1.14
Female‡	1.00	–
Race		
White‡	1.00	–
Black	1.09	0.97-1.24
Other	1.04	0.90-1.21
Type of hip fracture		
Subtrochanteric	**17.51§**	16.47-18.61
Other pertrochanteric‡	1.00	–
Residence and state assistance status		
Non-nursing home with no state assistance‡	1.00	–
Nursing home with no state assistance	**0.88**	0.82-0.94
Non-nursing home with state assistance	1.07	1.00-1.15
Nursing home with state assistance	0.93	0.85-1.01

*Medicare patients with intertrochanteric fracture treated with internal fixation from March 1, 2000, to December 31, 2002. †Values in boldface indicate a significant difference ($p < 0.05$). ‡Reference level. §$P < 0.0001$.

TABLE E-2 Surgeon and Hospital Factors in Intramedullary Nail Use Compared with Plate and Screws for Medicare Patients with an Intertrochanteric Hip Fracture: Results from Alternate Regression Models*

Predictor	No Random Effects† (Mean)	95% Confidence Interval for Odds Ratio	Random Hospital Intercepts†	95% Confidence Interval for Odds Ratio
Surgeon factors				
Surgeon age				
<35 yr	**1.76‡**	1.66-1.86	**2.16‡**	2.00-2.33
35-39 yr	**1.36‡**	1.30-1.43	**1.59‡**	1.49-1.69
40-44 yr	1.04	0.99-1.09	**1.16‡**	1.09-1.23
45-49 yr§	1.00	-	1.00	-
50-54 yr	**0.83‡**	0.79-0.88	**0.81‡**	0.76-0.87
55-59 yr	**0.62‡**	0.58-0.66	**0.62‡**	0.57-0.67
60-64 yr	**0.80‡**	0.74-0.85	**0.76‡**	0.70-0.84
≥65 yr	**0.63‡**	0.56-0.71	**0.54‡**	0.47-0.62
Professional degree				
Medical doctor (MD) §	1.00	-	1.00	-
Doctor of osteopathy (DO)	**1.38‡**	1.30-1.46	**1.42‡**	1.29-1.55
Orthopaedic board certification				
Board certified§	1.00	-	1.00	-
Not board certified	**1.08‡**	1.05-1.12	**1.11‡**	1.06-1.16
Practice structure				
Group practice§	1.00	-	1.00	-
Other	**1.13‡**	1.10-1.17	**1.07**	1.01-1.12
Number of case hospitals#				
1§	1.00	-	1.00	-
2	**1.21‡**	1.17-1.25	**1.13‡**	1.07-1.19
3	**1.23‡**	1.18-1.29	**1.23‡**	1.14-1.31
≥4	**1.67‡**	1.58-1.76	**1.58‡**	1.44-1.72
Surgeon case volume**				
1-4	1.01	0.91-1.08	**0.88**	0.80-0.97
5-10	**0.88‡**	0.84-0.92	**0.78‡**	0.74-0.83
11-17	**0.90‡**	0.87-0.93	**0.85‡**	0.81-0.89
≥18§	1.00	-	1.00	-
Hospital factors				
Type of ownership				
Nonprofit§	1.00	-	1.00	-
For profit	**1.23‡**	1.17-1.28	**1.46**	1.18-1.79
Government	1.04	1.00-1.09	1.17	0.96-1.42
Teaching status				
Nonteaching§	1.00	-	1.00	-

Teaching—no resident assistance with case(s)	**1.17‡**	1.13-1.20	**1.45‡**	1.27-1.62
Teaching—with resident assistance with case(s)	**2.04***	1.86-2.23	**2.41‡**	1.96-2.97
Hospital case volume‡				
1-17	**0.91**	0.84-0.98	**0.75**	0.59-0.94
18-41	**0.89‡**	0.85-0.94	**0.75**	0.62-0.92
42-78	**0.87‡**	0.84-0.90	**0.78**	0.64-0.94
≥79§	1.00	-	1.00	-
Year				
2000§	1.00	-	1.00	-
2001	**1.35‡**	1.30-1.41	**1.47‡**	1.40-1.54
2002	**2.26‡**	2.18-2.35	**2.90‡**	2.77-3.03

*Controlling for patient age, sex, race, subtrochanteric fracture, nursing home residence, and Medicaid assistance. †A value in boldface indicates a significant difference ($p < 0.05$). ‡$P < 0.0001$. §Reference level. #The number of hospitals at which each surgeon performed internal fixation to treat Medicare fee-for-service patients with an intertrochanteric hip fracture during the study period.**Number of intertrochanteric fractures treated with internal fixation.

TABLE E-3 Relative Improvement of Model Fit by the Inclusion of Parameter Groups and Random Effects

Model	Akaike Information Criterion (AIC)	Bayesian Information Criterion (BIC)
Intercept only	142,511	142,521
Random hospital intercepts	113,920	113,933
Random surgeon intercepts	94,029	94,044
Patient factors, year	132,654	132,776
Random hospital intercepts	84,460	84,566
Random surgeon intercepts	81,033	81,132
Patient and surgeon factors, year	130,118	130,403
Random hospital intercepts	100,313	100,492
Random surgeon intercepts	80,560	80,781
Patient, surgeon, and hospital factors, year	129,700	130,056
Random hospital intercepts	100,228	100,449
Random surgeon intercepts	80,541	80,815