Supplemental Appendix S1. Fracture Definitions from Claims

Fractures studied were those of the pelvis/hip, femur, lower leg, forearm, shoulder/upper arm, and rib/sternum. They were defined from Medicare Part B claims. Both International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes and Current Procedural Terminology (CPT) procedure codes were required for defining pelvis/hip, femur, lower leg, forearm, and shoulder/upper arm fractures (i.e., both the diagnosis code and the procedure code had to appear on the same line in the claim). Additionally, for pelvis/hip and femur fractures, the place of service was required to be either the inpatient setting or the emergency department. Fractures of the rib/sternum did not require a CPT code for diagnosis because they rarely require surgical intervention. Multiple fractures were counted, but a fracture claim was considered a "new" fracture only when it occurred at least 90 days after a previous claim for the same fracture (to minimize misclassification of complications of previous fracture events as new events). The ICD-9-CM diagnosis and CPT procedure codes used are listed in the Supplemental Table S1.

Supplemental Table S1. Codes used to identify fractures from billing claims

Fracture Site	ICD-9-CM Diagnosis Codes	CPT Codes	Additional requirements for Part B Claims
Pelvis/hip	733.14, 808.xx, 820.xx	27193-27248	Place of service IP or ED
Femur	733.15, 821.xx	27500-27514, 27520-27540, 29850-29856	Place of service IP or ED
Lower leg	733.16, 822.xx, 823.xx, 824.xx	27750-27828	–
Forearm	813.xx, 814.xx	25500-25526, 25530-25609, 25622-25652, 25680-25695	–
Shoulder/upper arm	733.11, 810.xx-812.xx	23500-23515, 23570-23630, 23665-23680, 24500-24587, 24620-24685 (except 24640)	–
Rib/sternum	807.0-807.3	–	–

CPT, Current Procedural Terminology; ED, emergency department; ICD-9-CM, International Classification of Diseases, Ninth Revision, Clinical Modification; IP, inpatient.

Supplemental Figure S1.