**Supplemental Table 1.** ICD-9-CM codes corresponding to procedures of interest.

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| Procedure | ICD-9-CM code(s) |
| Traumatic hip fracture | 820.00; 820.01; 820.02; 820.03; 820.09; 820.1; 820.11; 820.12; 820.13; 820.19; 820.20; 820.21; 820.22; 820.30; 820.31; 820.32; 820.8; 820.9; 821.00; 821.01; 821.10; 821.11; 821.20; 821.21 |
| Pathologic fracture | 733.14 |
| Malunion of fracture | 733.81 |
| Loosening of prosthesis | 996.41 |
| Fusion of 2 – 3 vertebrae | 81.61 |
| Fusion of 4 – 9 vertebrae | 81.62 |
| Fusion of 9 or more vertebrae | 81.63 |
| Primary THA | 81.51 |
| Revision THA | 00.70; 00.71; 00.72; 00.72; 81.53 |
| TKA | 81.41 |

 CM = Clinical Modification