



Appendix Table A2. Codes used to evaluate for systemic complications

Acute renal failure	ICD-10-D-1607	ICD-10-D-163339	ICD-10-D-182403	ICD-10-D-1222	ICD-10-D-J9621
ICD-9-D-5845	ICD-10-D-1608	ICD-10-D-163341	ICD-10-D-182409	ICD-10-D-12121	ICD-10-D-J9610
ICD-9-D-5846	ICD-10-D-1609	ICD-10-D-163342	ICD-10-D-182491	ICD-10-D-1229	ICD-10-D-J9611
ICD-9-D-5847	ICD-10-D-1610	ICD-10-D-163343	ICD-10-D-182492	ICD-10-D-12101	ICD-10-D-J9602
ICD-9-D-5848	ICD-10-D-1611	ICD-10-D-163349	ICD-10-D-182493	ICD-10-D-1221	ICD-10-D-J9620
ICD-9-D-5849	ICD-10-D-1612	ICD-10-D-16339	ICD-10-D-182499	ICD-10-D-1220	ICD-10-D-J9622
ICD-9-D-5800	ICD-10-D-1613	ICD-10-D-16340	ICD-10-D-1824Y1	ICD-10-D-1228	ICD-10-D-J9691
ICD-9-D-5804	ICD-10-D-1614	ICD-10-D-163411	ICD-10-D-1824Y2	Pneumonia	ICD-10-D-J95821
ICD-9-D-58081	ICD-10-D-1615	ICD-10-D-163412	ICD-10-D-1824Y3	ICD-9-D-413	ICD-10-D-J9612
ICD-9-D-58089	ICD-10-D-1616	ICD-10-D-163413	ICD-10-D-1824Y9	ICD-9-D-4800	ICD-10-D-J9692
ICD-9-D-5809	ICD-10-D-1618	ICD-10-D-163419	ICD-10-D-1824Z1	ICD-9-D-4801	ICD-10-D-J95822
ICD-10-D-N170	ICD-10-D-1619	ICD-10-D-163421	ICD-10-D-1824Z2	ICD-9-D-4802	ICD-10-D-J952
ICD-10-D-N171	ICD-10-D-16200	ICD-10-D-163422	ICD-10-D-1824Z3	ICD-9-D-4803	ICD-10-D-J953
ICD-10-D-N172	ICD-10-D-16201	ICD-10-D-163423	ICD-10-D-1824Z9	ICD-9-D-4808	Sepsis
ICD-10-D-N178	ICD-10-D-16202	ICD-10-D-163429	ICD-10-D-182501	ICD-9-D-4809	ICD-9-D-0031
ICD-10-D-N179	ICD-10-D-16203	ICD-10-D-163431	ICD-10-D-182502	ICD-9-D-481	ICD-9-D-0223
ICD-10-D-N19	ICD-10-D-1629	ICD-10-D-163432	ICD-10-D-182503	ICD-9-D-4820	ICD-9-D-0380
ICD-10-D-N990	ICD-10-D-16302	ICD-10-D-163433	ICD-10-D-182509	ICD-9-D-4821	ICD-9-D-03810
ICD-10-D-N000	ICD-10-D-16312	ICD-10-D-163439	ICD-10-D-182591	ICD-9-D-4822	ICD-9-D-03811
ICD-10-D-N001	ICD-10-D-16322	ICD-10-D-163441	ICD-10-D-182592	ICD-9-D-48230	ICD-9-D-03812
ICD-10-D-N002	ICD-10-D-1651	ICD-10-D-163442	ICD-10-D-182593	ICD-9-D-48231	ICD-9-D-03819
ICD-10-D-N003	ICD-10-D-163031	ICD-10-D-163443	ICD-10-D-182599	ICD-9-D-48232	ICD-9-D-0382
ICD-10-D-N004	ICD-10-D-163032	ICD-10-D-163449	ICD-10-D-1825Y1	ICD-9-D-48239	ICD-9-D-0383
ICD-10-D-N005	ICD-10-D-163033	ICD-10-D-16349	ICD-10-D-1825Y2	ICD-9-D-48240	ICD-9-D-03840
ICD-10-D-N006	ICD-10-D-163039	ICD-10-D-16350	ICD-10-D-1825Y3	ICD-9-D-48241	ICD-9-D-03841
ICD-10-D-N007	ICD-10-D-163131	ICD-10-D-163511	ICD-10-D-1825Y9	ICD-9-D-48242	ICD-9-D-03842
ICD-10-D-N008	ICD-10-D-163132	ICD-10-D-163512	ICD-10-D-1825Z1	ICD-9-D-48249	ICD-9-D-03843
ICD-10-D-N009	ICD-10-D-163133	ICD-10-D-163513	ICD-10-D-1825Z2	ICD-9-D-48281	ICD-9-D-03844
Anemia	ICD-10-D-163139	ICD-10-D-163519	ICD-10-D-1825Z3	ICD-9-D-48282	ICD-9-D-03849
ICD-9-D-2851	ICD-10-D-163231	ICD-10-D-163521	ICD-10-D-1825Z9	ICD-9-D-48283	ICD-9-D-0388
ICD-9-D-2800	ICD-10-D-163232	ICD-10-D-163522	Malignant hyperthermia	ICD-9-D-48284	ICD-9-D-0389
ICD-10-D-D500	ICD-10-D-163233	ICD-10-D-163523	ICD-9-D-99586	ICD-9-D-48289	ICD-9-D-0545
ICD-10-D-D62	ICD-10-D-163239	ICD-10-D-163529	ICD-10-D-T883XXA	ICD-9-D-4829	ICD-9-D-223
Cerebrovascular event	ICD-10-D-163011	ICD-10-D-163531	ICD-10-D-T883XXD	ICD-9-D-4830	ICD-9-D-380
ICD-9-D-430	ICD-10-D-163012	ICD-10-D-163532	ICD-10-D-T883XXS	ICD-9-D-4831	ICD-9-D-3812
ICD-9-D-431	ICD-10-D-163013	ICD-10-D-163533	Myocardial infarction	ICD-9-D-4838	ICD-9-D-382
ICD-9-D-4320	ICD-10-D-163019	ICD-10-D-163539	ICD-9-D-41000	ICD-9-D-4841	ICD-9-D-383
ICD-9-D-4321	ICD-10-D-163111	ICD-10-D-163541	ICD-9-D-41001	ICD-9-D-485	ICD-9-D-3840
ICD-9-D-4329	ICD-10-D-163112	ICD-10-D-163542	ICD-9-D-41002	ICD-9-D-486	ICD-9-D-3842
ICD-9-D-43300	ICD-10-D-163113	ICD-10-D-163543	ICD-9-D-41002	ICD-9-D-4870	ICD-9-D-3843
ICD-9-D-43301	ICD-10-D-163119	ICD-10-D-163549	ICD-9-D-41010	ICD-9-D-99731	ICD-9-D-3844
ICD-9-D-43310	ICD-10-D-163211	ICD-10-D-16359	ICD-9-D-41011	ICD-9-D-99732	ICD-9-D-388
ICD-9-D-43311	ICD-10-D-163212	ICD-10-D-1636	ICD-9-D-41012	ICD-10-D-J189	ICD-9-D-389
ICD-9-D-43320	ICD-10-D-163213	ICD-10-D-1638	ICD-9-D-41020	ICD-10-D-J188	ICD-9-D-545
ICD-9-D-43321	ICD-10-D-163219	ICD-10-D-1639	ICD-9-D-41021	ICD-10-D-J180	ICD-10-D-A021
ICD-9-D-43330	ICD-10-D-16300	ICD-10-D-16601	ICD-9-D-41022	ICD-10-D-J151	ICD-10-D-A227
ICD-9-D-43331	ICD-10-D-16309	ICD-10-D-16602	ICD-9-D-41030	ICD-10-D-J157	ICD-10-D-A267
ICD-9-D-43380	ICD-10-D-16310	ICD-10-D-16603	ICD-9-D-41031	ICD-10-D-J150	ICD-10-D-A327
ICD-9-D-43381	ICD-10-D-16319	ICD-10-D-16609	ICD-9-D-41032	ICD-10-D-J1289	ICD-10-D-A400
ICD-9-D-43390	ICD-10-D-16320	ICD-10-D-16611	ICD-9-D-41040	ICD-10-D-J09X1	ICD-10-D-A401
ICD-9-D-43391	ICD-10-D-16329	ICD-10-D-16612	ICD-9-D-41041	ICD-10-D-J851	ICD-10-D-A403
ICD-9-D-43400	ICD-10-D-1658	ICD-10-D-16613	ICD-9-D-41042	ICD-10-D-J1001	ICD-10-D-A408
ICD-9-D-43401	ICD-10-D-1659	ICD-10-D-16619	ICD-9-D-41050	ICD-10-D-J1108	ICD-10-D-A409
ICD-9-D-43410	ICD-10-D-16501	ICD-10-D-16621	ICD-9-D-41051	ICD-10-D-J153	ICD-10-D-A4101
ICD-9-D-43411	ICD-10-D-16502	ICD-10-D-16622	ICD-9-D-41052	ICD-10-D-J122	ICD-10-D-A4102
ICD-9-D-43490	ICD-10-D-16503	ICD-10-D-16623	ICD-9-D-41080	ICD-10-D-J1281	ICD-10-D-A411
ICD-9-D-43491	ICD-10-D-16509	ICD-10-D-16629	ICD-9-D-41081	Pulmonary embolism	ICD-10-D-A412
ICD-10-D-16000	ICD-10-D-16521	ICD-10-D-1668	ICD-9-D-41082	ICD-9-D-41511	ICD-10-D-A413
ICD-10-D-16001	ICD-10-D-16522	ICD-10-D-1669	ICD-9-D-41090	ICD-9-D-41513	ICD-10-D-A414
ICD-10-D-16002	ICD-10-D-16523	ICD-9-D-4359	ICD-9-D-41091	ICD-9-D-41519	ICD-10-D-A4150
ICD-10-D-16010	ICD-10-D-16529	ICD-9-D-4358	ICD-9-D-41092	ICD-9-D-4162	ICD-10-D-A4151
ICD-10-D-16011	ICD-10-D-G458	Deep vein thrombosis	ICD-9-D-41070	ICD-10-D-12609	ICD-10-D-A4152
ICD-10-D-16012	ICD-10-D-G459	ICD-9-D-45340	ICD-9-D-41071	ICD-10-D-12699	ICD-10-D-A4153
ICD-10-D-1602	ICD-10-D-16330	ICD-9-D-45341	ICD-9-D-41072	ICD-10-D-12782	ICD-10-D-A4159
ICD-10-D-16020	ICD-10-D-163311	ICD-9-D-45342	ICD-9-D-41060	Respiratory failure	ICD-10-D-A4181
ICD-10-D-16021	ICD-10-D-163312	ICD-9-D-45111	ICD-9-D-41061	ICD-9-D-51853	ICD-10-D-A4189
ICD-10-D-16022	ICD-10-D-163313	ICD-9-D-45119	ICD-9-D-41062	ICD-9-D-51851	ICD-10-D-A419
ICD-10-D-16030	ICD-10-D-163319	ICD-9-D-45389	ICD-10-D-1214	ICD-9-D-51883	ICD-10-D-A427
ICD-10-D-16031	ICD-10-D-163321	ICD-9-D-4539	ICD-10-D-1213	ICD-9-D-51884	ICD-10-D-A5486
ICD-10-D-16032	ICD-10-D-163322	ICD-9-D-4512	ICD-10-D-12119	ICD-9-D-51881	ICD-10-D-B377
ICD-10-D-1604	ICD-10-D-163323	ICD-9-D-45350	ICD-10-D-12109	ICD-9-D-51852	ICD-10-D-R6520
ICD-10-D-16050	ICD-10-D-163329	ICD-9-D-45351	ICD-10-D-12129	ICD-9-D-51882	ICD-10-D-R6521
ICD-10-D-16051	ICD-10-D-163331	ICD-9-D-45352	ICD-10-D-1240	ICD-10-D-J9601	
ICD-10-D-16052	ICD-10-D-163332	ICD-10-D-182401	ICD-10-D-12111	ICD-10-D-J9600	
ICD-10-D-1606	ICD-10-D-163333	ICD-10-D-182402	ICD-10-D-12102	ICD-10-D-J9690	

Appendix Table A3. Codes used to evaluate for joint complications

Joint infection	Periprosthetic fracture	Aseptic loosening	Prosthetic dislocation	
ICD-9-D-99667	ICD-9-D-99644	ICD-9-D-99641	ICD-9-P-7975	ICD-10-P-0SSB44Z
ICD-9-D-99666	ICD-9-D-99644	ICD-9-D-99641	ICD-9-P-7985	ICD-10-P-0SSBX4Z
ICD-10-D-T8451XA	ICD-10-D-M9701XA	ICD-10-D-T84030A	ICD-9-P-7976	ICD-10-P-0SSBX5Z
ICD-10-D-T8451XD	ICD-10-D-M9702XA	ICD-10-D-T84030D	ICD-9-P-7986	ICD-10-P-0SSBXZZ
ICD-10-D-T8451XS	ICD-10-D-M9711XA	ICD-10-D-T84030S	ICD-10-P-0SS904Z	ICD-10-P-0SSC04Z
ICD-10-D-T8452XA	ICD-10-D-M9711XD	ICD-10-D-T84031A	ICD-10-P-0SS905Z	ICD-10-P-0SSC0ZZ
ICD-10-D-T8452XD	ICD-10-D-M9711XS I	ICD-10-D-T84031D	ICD-10-P-0SS90ZZ	ICD-10-P-0SSC3ZZ
ICD-10-D-T8452XS	CD-10-D-M9712XA	ICD-10-D-T84031S	ICD-10-P-0SS934Z	ICD-10-P-0SSC4ZZ
ICD-10-D-T8453XA	ICD-10-D-M9712XD	ICD-10-D-T84032A	ICD-10-P-0SS93ZZ	ICD-10-P-0SSCXZZ
ICD-10-D-T8453XD	ICD-10-D-M9712XS	ICD-10-D-T84032D	ICD-10-P-0SS944Z	ICD-10-P-0SSD04Z
ICD-10-D-T8453XS	ICD-10-D-T84042A	ICD-10-D-T84032S	ICD-10-P-0SS9X4Z	ICD-10-P-0SSD0ZZ
ICD-10-D-T8454XA	ICD-10-D-T84042D	ICD-10-D-T84033A	ICD-10-P-0SS9XZZ	ICD-10-P-0SSDX5Z
ICD-10-D-T8454XD	ICD-10-D-T84042S	ICD-10-D-T84033D	ICD-10-P-0SSB04Z	ICD-10-P-0SSDXZZ
ICD-10-D-T8454XS	ICD-10-D-T84043A	ICD-10-D-T84033S	ICD-10-P-0SSB0ZZ	
	ICD-10-D-T84043D		ICD-10-P-0SSB34Z	
	ICD-10-D-T84043S		ICD-10-P-0SSB3ZZ	

ICD-9/10, International Classification of Diseases, Ninth Revision and Tenth Revision.