

ICD-10-based Relative Cost Weights, PAC-10

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SUMMARY. The Province of Ontario applies relative cost weights to acute inpatient activity submitted to the Canadian Institute of Health Information's (CIHI) Discharge Abstract Database (DAD) for a variety of purposes. The introduction of the International Statistical Classification of Diseases and Related Health Problems - Tenth Revision, Canada (ICD-10-CA) and the Canadian Classification of Health Interventions (CCI) in Ontario introduces changes in Case Mix Group (CMGTM) assignment. Statistical methods are used to identify affected CMG. Relative cost weights are developed for use in Ontario to be applied to 2002/2003 DAD acute inpatient activity. The new relative cost weights are known as PAC-10 to reflect their application to ICD-10-CA and CCI activity. Recommendations regarding their application to weighted cases are provided.

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Background

Prior to 2002, the *International Statistical Classification of Diseases, Injuries and Causes of Death - Ninth Revision* (ICD-9) and the *International Classification of Diseases - Ninth Revision, Clinical Modification* (ICD-9-CM, Volumes 2 and 3) were used to classify disease and intervention data in Ontario.

The *International Statistical Classification of Diseases and Related Health Problems - Tenth Revision, Canada* (ICD-10-CA) and *Canadian Classification of Health Interventions* (CCI) have been widely implemented in Canada. Effective April 2002, Ontario mandated the use of ICD-10-CA and CCI for acute inpatient abstracts submitted to the Canadian Institute for Health Information's (CIHI) Discharge Abstract Database (DAD).

All Ontario acute hospitals in Ontario submit electronic discharge summary data to CIHI. The DAD contains administrative and clinical data elements. Example administrative elements include gender, birthdate, and institution number. Clinical data includes intervention date, intervention codes and diagnosis codes. A complete listing of DAD data elements can be found in CIHI's *DAD Abstracting Manual* (2001).

CMG/Plx Grouping Methodology and RIW Values

CIHI applies the CMG/Plx grouping methodology to acute inpatient data submitted to the DAD from Ontario hospitals. The CMG/Plx methodology assigns each inpatient record to one of 478 discrete groups, known as Case Mix Groups (CMG). Each group represents a clinically similar group of patients that have similar episode costs. A complete list of CMG is available from CIHI's *Discharge Abstract Database Resource Intensity Weights and Expected Length of Stay 2002* (2002) publication.

Within CMG, the Complexity (Plx) algorithm assigns patients into 4 levels of increasing patient complexity (and cost). The Plx methodology was formally applied to inpatient data submitted to CIHI's DAD in 1997. A detailed treatment of the methodology used to assign patients to CMG/Plx is provided in CIHI's *CMG/Plx Directory, ICD-10-CA/CCI Version* (2002).

Resource Intensity Weights (RIW) are values that CIHI calculates annually that represent the relative cost between patient types (as defined by CMG/Plx groups). RIW values are extensively used in Ontario for a variety of purposes, such as the Integrated Population Based Allocation (IPBA) hospital funding formula. For a comprehensive review of the history of RIW, refer to CIHI's document, *Resource Intensity Weights Summary of Methodology 1994/1995* (undated), Benoit, Skea and Mitchell (2000) and Sutherland, Benoit and Mitchell (2000).

Data Quality and CMG/Plx Assignment

The validity of clinical data submitted to the DAD is critical to assuring that the assigned CMG and RIW value represents the relative cost of every patient. Inaccurate clinical data may result in CMG/Plx assignment that does not reflect relative patient cost.

CIHI's data quality re-abstraction study is a recent multi-year examination of the quality

of clinical and administrative information submitted to the DAD. The study design and results are described completely in CIHI's publication *Discharge Abstract Database Data Quality Re-abstractation Study* (2002). In summary, the results from the first two years of the study found 12.8% variation in the most responsible diagnosis (MRDx) and 23.2% variation in comorbid condition diagnosis. Important to Plx assignment, the study found 15.5% variation in comorbid condition diagnosis type. Variation is also found in surgical CMG, as the study found 7.0% variation in principal procedure and 19.7% variation in other procedures.

PAC Relative Cost Weights

Based on analysis of 2001/2002 DAD data, Preyra and Sandor (2002) report that inter-hospital variation in comorbidity reporting may result in inaccurate estimates of hospital case mix. In response to observed variation in assigned complexity in Ontario acute inpatient hospitals, Preyra and Sandor (2002) developed relative cost weights without the Plx adjustment to CMG. Relative cost weights using this methodology are known as Prospective Complexity Adjustment (known as PAC cost weights), and have been applied to 2001/2002 Ontario acute inpatient discharge data for the purposes of the IPBA hospital funding formula and other Ontario Ministry of Health and Long Term Care initiatives.

ICD-10-CA and CCI Implementation and CMG Assignment

ICD-10 has been implemented in many countries for mortality and morbidity reporting. An introduction to the differences between ICD-10 and ICD-9 can be found in the Centers for Disease Control and Prevention *International Classification of Diseases 10th revision* (2001).

Many countries found substantial differences in mortality trending solely due to the implementation of ICD-10. "Bridge-coding" studies abstracted charts in ICD-10 and ICD-9 to identify areas that would be impacted. Anderson et al. (2001) report results from over 1.8 million re-abstracted death reports in the United States, while Rooney, Griffiths and Cook (2001) describe the results for over 500,000 death reports in the UK. Studies from Scotland (GRO, 2000), Australia (Jayne and Casey, 2001) and Sweden (Johansson, in press) all report differences in mortality rates (for selected causes of death) due to the implementation of ICD-10. Preyra, Sandor and Sutherland (2003) find similar points of discontinuity in morbidity trending in 2002/2003 DAD data from the Province of Ontario.

In preparation for the implementation of ICD-10-CA/CCI, CIHI prepared a 'backward' conversion of ICD-10 data to ICD-9 data. Tables that "map" ICD-10-CA and CCI to their ICD-9 equivalent were made, insofar as possible, to assign patients to the same CMG as the equivalent ICD-9 code. With this approach, the CMG/Plx methodology based on ICD-9 codes is still used to assign patients to CMG/Plx groups.

Based on abstracts submitted to the DAD from provinces that use ICD-10-CA and CCI, CIHI describes significant changes in CMG assignment patterns, reporting "Our analysis suggests that approximately 173 of 478 CMG (36%) appear to be affected" (Alvarez, 2003). Detailed CMG-

level analysis is provided in the CIHI publication *Coping with the Introduction of ICD-10-CA and CCI* (2003). Preyra, Sandor and Sutherland (2003) find similar results in Ontario DAD activity.

The most recent RIW values are based on ICD-9 patient-level cost data. Due to the change in CMG assignment for some patient types, the assigned RIW may not correspond to the relative cost of the case. All published methods do not provide an indication of the direction or the magnitude of the difference between the existing RIW values and those that would be based on ICD-10-CA and CCI patient cost data (if it were available). The discrepancy between the clinical data and its associated RIW will be resolved when patient-level cost data abstracted in ICD-10-CA and CCI becomes available in 2004.

Creating Weights Corresponding to Changes in CMG Assignment

Statistical methods known as finite mixture models are applied to length of stay data to identify which CMG are affected by the implementation of ICD-10-CA and CCI. Finite mixture models have been applied to a variety of problems including health care management (Gerdtham and Trivedi, 2000), clinical research (Wang et al., 1996) and market research (Wedel et al., 1993).

The objective of the statistical methods is to identify distinct sub-populations within a larger population. In our context, differences in the distribution of length of stay between ICD-9 and ICD-10-CA data are sought. The rationale is that changes in CMG assignment will manifest as changes in the distribution of length of stay in affected CMG.

After careful consideration of the different distributions of length of stay, adjustments may be made to selected patient-level cost records to reflect differences in length of stay in affected CMG. All patient-level cost records form the basis for developing new cost weights. Each CMG and age group is examined for differences. To address underlying data quality concerns in comorbidity reporting, Plx is not re-introduced for 2002/2003 activity. Technical details of the methodology are provided in Appendices C and D of this document.

PAC-10 weights have been recommended to be applied to Ontario's 2002/2003 ICD-10-CA and CCI DAD activity by the Joint Policy and Planning Committee's (JPPC) Funding Formula Technical Working Group. PAC-10 weights are applied at the patient-level and will be the basis of measurement of hospital output for the IPBA rate and volume hospital funding methods.

Typical PAC-10 weights (excluding long length stay outliers, deaths and transfers) are included in Appendix C of this document. Expected length of stay (ELOS) and length of stay trim points are provided in Appendix D. ELOS and length of stay trim points are based on 2002/2003 activity from Ontario hospitals (does not include activity from other provinces).

Limitations and Recommended Uses

Although PAC-10 weights are available for all CMG and age group combinations, PAC-10 weights are not based on ICD-10-CA and CCI patient-level cost data. PAC-10 weights adjust for observed changes in length of stay distributions in CMG and age group combinations as

a result of the implementation of ICD-10-CA and CCI.

The JPPC Funding Formula Technical Working Group recommends that PAC-10 weights are the best available measure of relative cost when aggregated to the Major Clinical Category (MCC) level. Although appropriate for use at the MCC-level, because of significant changes in CMG volume due to the introduction of ICD-10-CA and CCI, the validity of PAC-10 weights within CMG and age group combinations cannot be measured without patient-level cost information.

The following are specific recommendations regarding the use of the PAC-10 weights:

- PAC-10 weights are an interim measure, and are to be applied to 2002/2003 DAD activity only;
- Aggregate PAC-10 weights to the MCC level;
- Patient-level and CMG-level application of PAC-10 weights should be avoided.

It is expected that patient-level cost data from Ontario hospitals will become available in 2004. At that time, the Ministry of Health and Long Term Care will evaluate alternative cost weights.

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
001	CRANIOTOMY PROCEDURES	2.6556	0.2739	0.2897	0.3510	2.5007	0.2561	0.2703	0.3510	2.3934	0.1936	0.2021	0.3510
003	SPINAL PROCEDURES	2.4362	0.2842	0.3041	0.3335	1.6535	0.2239	0.2372	0.3335	3.2337	0.1425	0.1471	0.3335
004	EXTRACRANIAL VASCULAR PROCEDURES	1.2937	0.2601	0.2737	0.5060	1.2937	0.2601	0.2737	0.5060	1.2937	0.2601	0.2737	0.5060
005	VENTRICULAR SHUNT REVISION	1.0382	0.2676	0.2985	0.3773	1.0287	0.1916	0.2085	0.3773	1.0250	0.1906	0.2073	0.3773
006	CARPAL TUNNEL RELEASE AND SPECIFIED NERVOUS SYSTEM PROCEDURES	0.7549	0.2190	0.2461	0.5060	0.7549	0.2190	0.2461	0.5060	0.7549	0.2190	0.2461	0.5060
007	PERIPHERAL CRANIAL NERVE AND OTHER NEUROLOGICAL PROCEDURES	1.7887	0.2252	0.2434	0.1886	2.1331	0.1803	0.1919	0.1886	3.3750	0.1307	0.1353	0.1886
010	NEOPLASM OF NERVOUS SYSTEM	1.0590	0.1337	0.1407	0.1849	1.3049	0.1114	0.1139	0.1849	1.5556	0.1076	0.1093	0.1849
011	DEGENERATIVE NERVOUS DISORDERS	1.1410	0.1218	0.1385	0.1808	1.3497	0.1156	0.1278	0.1808	1.6683	0.0932	0.0932	0.1808
012	MULTIPLE SCLEROSIS AND CEREBELLAR DISORDERS	0.7411	0.1044	0.1062	0.1363	0.8744	0.0950	0.0950	0.1363	0.8911	0.1011	0.1019	0.1363
013	SPECIFIC CEREBROVASCULAR DISORDERS EXCEPT TRANSIENT ISCHEMIC ATTACKS	1.3311	0.1324	0.1457	0.1585	1.0303	0.1114	0.1163	0.1585	1.3608	0.0971	0.0971	0.1585
014	TRANSIENT ISCHEMIC ATTACKS AND PRECEREBRAL OCCLUSIONS	0.7307	0.1170	0.1205	0.1884	0.7307	0.1170	0.1205	0.1884	0.7198	0.1127	0.1154	0.1884
015	NONSPECIFIC CEREBROVASCULAR DISORDERS	1.0831	0.1325	0.1414	0.1603	1.1202	0.1325	0.1414	0.1603	0.8887	0.0967	0.0967	0.1603
017	CRANIAL AND PERIPHERAL NERVE DISEASES	0.8104	0.1510	0.1579	0.1893	1.0032	0.1250	0.1284	0.1893	1.3169	0.1002	0.1004	0.1893
018	VIRAL MENINGITIS	0.6280	0.1567	0.1567	0.2467	0.9327	0.1282	0.1282	0.2467	0.9352	0.1305	0.1305	0.2467
019	INFECTION EXCEPT VIRAL MENINGITIS	1.6849	0.2003	0.2151	0.2055	1.5921	0.1451	0.1519	0.2055	2.1872	0.1320	0.1368	0.2055
020	HYPERTENSIVE ENCEPHALOPATHY	2.0305	0.1403	0.1422	0.3626	2.0305	0.1403	0.1422	0.3626	2.0305	0.1403	0.1422	0.3626
021	NON-TRAUMATIC STUPOR AND COMA	0.6809	0.1439	0.1532	0.2350	0.8509	0.1320	0.1389	0.2350	0.6968	0.1098	0.1121	0.2350
022	SEIZURE AND HEADACHE	0.5890	0.1501	0.1557	0.2673	0.6904	0.1200	0.1224	0.2673	0.8767	0.1089	0.1100	0.2673
028	OTHER NERVOUS SYSTEM DIAGNOSES	0.6802	0.1365	0.1877	0.1846	0.9180	0.1052	0.1137	0.1846	1.1262	0.0960	0.0960	0.1846
040	TRACHEOSTOMY AND GASTROSTOMY PROCEDURES	12.3608	0.2107	0.2577	0.3334	13.4320	0.2128	0.2607	0.3334	8.5359	0.1552	0.1789	0.3334
050	ORBITAL PROCEDURES	0.9398	0.2472	0.2587	0.4394	0.7042	0.2683	0.2813	0.4394	0.8519	0.2200	0.2293	0.4394
051	OTHER INTRAOCULAR PROCEDURES	0.5064	0.2131	0.2141	0.3617	0.5064	0.2131	0.2141	0.3617	0.5064	0.2131	0.2141	0.3617
052	RETINAL PROCEDURES	0.5288	0.2564	0.2579	0.4067	0.5288	0.2564	0.2579	0.4067	0.5288	0.2564	0.2579	0.4067
053	IRIS AND LENS PROCEDURES	0.3905	0.1695	0.1695	0.2789	0.3905	0.1695	0.1695	0.2789	0.3905	0.1695	0.1695	0.2789
054	EXTRAOCULAR PROCEDURES	0.5930	0.2026	0.2569	0.3706	0.5930	0.2026	0.2569	0.3706	0.5930	0.2026	0.2569	0.3706
055	LENS INSERTION (MNRH)	0.5515	0.2897	0.2897	0.4597	0.5515	0.2897	0.2897	0.4597	0.5515	0.2897	0.2897	0.4597
057	OTHER OPHTHALMIC PROCEDURES (MNRH)	0.5883	0.2044	0.2044	0.4903	0.5883	0.2044	0.2044	0.4903	0.5883	0.2044	0.2044	0.4903
060	MAJOR EYE INFECTIONS	0.6403	0.1059	0.1060	0.1971	0.5386	0.1205	0.1207	0.1971	0.6701	0.1034	0.1034	0.1971
062	HYPHEMA	0.3491	0.0767	0.0767	0.1331	0.3491	0.0767	0.0767	0.1331	0.3491	0.0767	0.0767	0.1331
063	OTHER OPHTHALMIC DIAGNOSES (MNRH)	0.3800	0.1254	0.1276	0.1531	0.4500	0.1121	0.1132	0.1531	0.6056	0.0947	0.0947	0.1531
075	RADICAL LARYNGECTOMY AND GLOSSECTOMY	6.4692	0.2472	0.2515	0.3459	6.4692	0.2472	0.2515	0.3459	6.4692	0.2472	0.2515	0.3459
076	MAJOR HEAD AND NECK PROCEDURES	1.9539	0.2901	0.2997	0.3726	2.1288	0.2675	0.2761	0.3726	2.7265	0.2571	0.2652	0.3726
077	LESS EXTENSIVE HEAD AND NECK PROCEDURES	0.6174	0.2792	0.2796	0.4386	0.6406	0.2632	0.2635	0.4386	0.8677	0.1915	0.1917	0.4386
078	CLEFT LIP AND PALATE REPAIR	1.0433	0.3889	0.3889	0.5060	1.0433	0.3889	0.3889	0.5060	1.0433	0.3889	0.3889	0.5060
081	SALIVARY GLAND PROCEDURES	0.8647	0.3889	0.3889	0.5060	0.8531	0.3340	0.3340	0.5060	0.7335	0.2421	0.2421	0.5060
082	MINOR EAR, NOSE AND THROAT PROCEDURES	0.3502	0.2195	0.2256	0.2501	0.3502	0.2195	0.2256	0.2501	0.3502	0.2195	0.2256	0.2501
083	RECONSTRUCTIVE ENT PROCEDURES	1.1072	0.3889	0.3889	0.5060	1.1072	0.3889	0.3889	0.5060	1.1072	0.3889	0.3889	0.5060
084	MISCELLANEOUS EAR, NOSE AND THROAT PROCEDURES	0.7151	0.2360	0.2360	0.4137	0.9670	0.2523	0.2523	0.4137	0.8909	0.2506	0.2506	0.4137
085	MASTOID PROCEDURES	1.5797	0.3889	0.3889	0.5060	1.5797	0.3889	0.3889	0.5060	1.5797	0.3889	0.3889	0.5060
086	OTHER TONSILLAR PROCEDURES	0.2433	0.1523	0.1530	0.1416	0.3112	0.1460	0.1467	0.1416	0.3128	0.1457	0.1464	0.1416
087	SINUS PROCEDURES	0.4777	0.2435	0.2435	0.3981	0.4777	0.2435	0.2435	0.3981	0.4777	0.2435	0.2435	0.3981
088	ETHMOIDECTOMY (MNRH)	0.4547	0.2937	0.2937	0.4133	0.4547	0.2937	0.2937	0.4133	0.4547	0.2937	0.2937	0.4133
089	DENTAL EXTRACTION OR RESTORATION (MNRH)	0.5180	0.2629	0.2629	0.3700	0.5180	0.2629	0.2629	0.3700	0.5180	0.2629	0.2629	0.3700
090	EXTERNAL AND MIDDLE EAR PROCEDURES (MNRH)	0.4861	0.3506	0.3506	0.4419	0.4861	0.3506	0.3506	0.4419	0.4861	0.3506	0.3506	0.4419
091	NASAL PROCEDURES (MNRH)	0.4339	0.3068	0.3068	0.3944	0.4339	0.3068	0.3068	0.3944	0.4339	0.3068	0.3068	0.3944
092	MYRINGOTOMY (MNRH)	0.5971	0.1538	0.1538	0.2488	0.5971	0.1538	0.1538	0.2488	0.5971	0.1538	0.1538	0.2488
093	TONSILLECTOMY AND ADENOIDECTOMY PROCEDURES (MNRH)	0.3299	0.1976	0.1976	0.2999	0.3299	0.1976	0.1976	0.2999	0.3299	0.1976	0.1976	0.2999
100	ENT MALIGNANCY	0.5741	0.1331	0.1331	0.1352	0.5741	0.1331	0.1352	0.1331	0.8087	0.1362	0.1384	0.1331
101	ACUTE SUPPURATIVE INFECTIONS	0.4554	0.1049	0.1050	0.1505	0.4692	0.1048	0.1049	0.1505	0.4545	0.1082	0.1085	0.1505
102	DYSEQUILIBRIUM	0.4500	0.0996	0.0996	0.1652	0.4772	0.1015	0.1017	0.1652	0.4972	0.0796	0.0796	0.1652
104	INFLUENZA	0.4038	0.1371	0.1400	0.1891	0.4310	0.1270	0.1291	0.1891	0.6271	0.0918	0.0918	0.1891
107	EPIGLOTTITIS	0.6929	0.2411	0.2461	0.3150	0.6929	0.2411	0.2461	0.3150	0.6929	0.2411	0.2461	0.3150
108	EPISTAXIS	0.5540	0.1086	0.1090	0.1910	0.5540	0.1086	0.1090	0.1910	0.5540	0.1086	0.1090	0.1910
109	OTHER ENT INFECTIONS	0.3837	0.1039	0.1039	0.1706	0.4939	0.1041	0.1041	0.1706	0.5196	0.0979	0.0979	0.1706
113	SINUSITIS (MNRH)	0.4813	0.1186	0.1186	0.1782	0.4813	0.1186	0.1186	0.1782	0.4813	0.1186	0.1186	0.1782
114	SORE THROAT (MNRH)	0.3300	0.1090	0.1090	0.1454	0.2898	0.0989	0.0989	0.1454	0.2981	0.1180	0.1180	0.1454
115	MISCELLANEOUS ENT DIAGNOSES (MNRH)	0.4039	0.1749	0.1751	0.2399	0.3621	0.1327	0.1328	0.2399	0.6222	0.1217	0.1218	0.2399
116	CROUP (MNRH)	0.2930	0.1132	0.1133	0.2442	0.2930	0.1132	0.1133	0.2442	0.2930	0.1132	0.1132	0.2442
125	TRACHEOSTOMY	19.9020	0.2836	0.3021	0.3843	20.7990	0.2810	0.2992	0.3843	25.0737	0.2599	0.2759	0.3843
126	RESECTION OF LUNG	2.0002	0.2663	0.2702	0.3310	2.0471	0.2611	0.2649	0.3310	2.4753	0.2454	0.2488	0.3310

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
127	MAJOR RESPIRATORY PROCEDURES	3.0829	0.2998	0.3097	0.2542	2.1643	0.1989	0.2038	0.2542	2.8002	0.1606	0.1637	0.2542
128	MINOR RESPIRATORY PROCEDURES	1.5992	0.1829	0.1858	0.3720	1.5992	0.1829	0.1858	0.3720	1.5992	0.1829	0.1858	0.3720
129	OTHER RESPIRATORY PROCEDURES	1.2418	0.1785	0.1840	0.3362	1.5354	0.1675	0.1723	0.3362	1.3334	0.1624	0.1668	0.3362
135	TUBERCULOSIS	1.5620	0.1152	0.1158	0.1375	1.5620	0.1152	0.1158	0.1375	1.6177	0.1087	0.1090	0.1375
136	RESPIRATORY FAILURE	3.4420	0.2614	0.2805	0.2636	3.6930	0.2420	0.2589	0.2636	2.2730	0.1598	0.1670	0.2636
137	RESPIRATORY INFECTIONS AND INFLAMMATIONS	1.4454	0.1760	0.2100	0.2089	2.0493	0.1486	0.1705	0.2089	1.6301	0.1113	0.1168	0.2089
138	RESPIRATORY NEOPLASMS	1.3575	0.1303	0.1343	0.1891	1.4764	0.1215	0.1243	0.1891	1.6823	0.1049	0.1057	0.1891
139	INTERSTITIAL DISEASE	1.0173	0.1289	0.1317	0.1542	1.0173	0.1271	0.1298	0.1542	1.3697	0.1017	0.1020	0.1542
140	CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)	1.1055	0.1314	0.1362	0.1832	1.1055	0.1314	0.1362	0.1832	1.2203	0.0985	0.0985	0.1832
141	PULMONARY EDEMA	1.4684	0.1652	0.1704	0.2719	1.4684	0.1652	0.1704	0.2719	1.4684	0.1652	0.1704	0.2719
142	CHRONIC BRONCHITIS	0.9140	0.1193	0.1216	0.1669	1.0306	0.1201	0.1225	0.1669	0.9453	0.1053	0.1060	0.1669
143	SIMPLE PNEUMONIA AND PLEURISY	0.6979	0.1432	0.1529	0.2006	0.9364	0.1326	0.1399	0.2006	1.1832	0.1095	0.1117	0.2006
144	PNEUMOTHORAX	0.4083	0.0941	0.0941	0.1331	0.4250	0.1076	0.1331	0.1331	0.5989	0.1365	0.1370	0.1331
145	TRACHEOBRONCHITIS	0.5153	0.1287	0.1291	0.2011	0.5139	0.1318	0.1322	0.2011	0.7015	0.0814	0.0814	0.2011
146	ASTHMA	0.5050	0.1274	0.1275	0.2470	0.6633	0.1279	0.1280	0.2470	0.8888	0.0987	0.0987	0.2470
147	OTHER RESPIRATORY DIAGNOSES	0.5238	0.2224	0.2271	0.2071	0.6256	0.1685	0.1712	0.2071	0.7970	0.1349	0.1363	0.2071
175	HEART OR LUNG TRANSPLANT	11.4463	0.3889	0.3889	0.4524	11.4463	0.3889	0.3889	0.4524	11.4463	0.3889	0.3889	0.4524
176	CARDIAC VALVE REPLACEMENT WITH HEART PUMP WITH CARDIAC CATH	7.2996	0.2864	0.3181	0.3925	7.2996	0.2864	0.3181	0.3925	7.2996	0.2864	0.3181	0.3925
177	CARDIAC VALVE REPLACEMENT WITH HEART PUMP WITHOUT CARDIAC CATH	3.7765	0.3862	0.3889	0.5049	3.9729	0.3862	0.3889	0.5049	4.4447	0.3862	0.3889	0.5049
178	CORONARY BYPASS WITH HEART PUMP WITH CARDIAC CATH	4.7070	0.2920	0.2929	0.3371	4.7070	0.2920	0.2929	0.3371	5.0107	0.2810	0.2810	0.3371
179	CORONARY BYPASS WITH HEART PUMP WITHOUT CARDIAC CATH	2.7810	0.3649	0.3656	0.4251	2.7810	0.3651	0.3658	0.4251	3.1203	0.3438	0.3445	0.4251
181	OTHER CARDIO-THORACIC PROCEDURES WITH HEART PUMP WITH CARDIAC CATH	5.6527	0.3326	0.3326	0.3255	5.4775	0.3326	0.3326	0.3255	5.2847	0.3326	0.3326	0.3255
182	OTHER CARDIO-THORACIC PROCEDURES WITH HEART PUMP WITHOUT CARDIAC CATH	4.2000	0.3884	0.3889	0.4703	2.8225	0.3884	0.3889	0.4703	3.4895	0.3426	0.3430	0.4703
183	MAJOR CARDIO-THORACIC PROCEDURES WITHOUT HEART PUMP WITH CARDIAC CATH	4.0141	0.2856	0.2887	0.5060	4.2903	0.2892	0.2924	0.5060	5.7431	0.2371	0.2395	0.5060
184	MAJOR CARDIO-THORACIC PROCEDURES WITHOUT HEART PUMP WITHOUT CARDIAC CATH	2.4108	0.3269	0.3303	0.5060	2.6604	0.3333	0.3368	0.5060	3.2657	0.2876	0.2905	0.5060
185	PERMANENT PACEMAKER IMPLANT FOR SPECIFIED CARDIAC CONDITIONS	5.7827	0.3594	0.3787	0.5060	5.7827	0.3594	0.3787	0.5060	4.5184	0.2789	0.2922	0.5060
186	PERMANENT PACEMAKER IMPLANT WITHOUT SPECIFIED CARDIAC CONDITIONS	2.3865	0.3298	0.3412	0.5060	2.6206	0.3322	0.3438	0.5060	2.3129	0.2620	0.2701	0.5060
188	PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY W COMPLICATING CARD CONDITIONS	2.1806	0.3222	0.3230	0.4517	2.1806	0.3222	0.3230	0.4517	2.6506	0.2739	0.2746	0.4517
189	PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY W/O COMPLIC CARDIAC CONDITIONS	1.1196	0.3888	0.3889	0.5060	1.1031	0.3888	0.3889	0.5060	1.1117	0.3510	0.3511	0.5060
191	TEMPORARY CARDIAC PACEMAKER	1.6888	0.2113	0.2233	0.3430	1.9870	0.2113	0.2233	0.3430	2.7151	0.2113	0.2233	0.3430
193	CARDIAC PACEMAKER DEVICE REPLACEMENT OR REVISION	1.5215	0.3169	0.3177	0.5060	1.5215	0.3169	0.3177	0.5060	1.5215	0.3169	0.3177	0.5060
194	MINOR CARDIO-THORACIC PROCEDURES WITHOUT HEART PUMP	0.5464	0.3851	0.3889	0.4219	0.5119	0.3272	0.3302	0.4219	0.5510	0.2656	0.2679	0.4219
200	AMI, UNSTABLE ANGINA OR CARDIAC CATH WITH SHOCK OR PULMONARY EMBOLISM	4.6086	0.1975	0.2017	0.3629	4.6086	0.1975	0.2017	0.3629	4.6086	0.1975	0.2017	0.3629
201	AMI WITH CARDIAC CATH WITH CONGESTIVE HEART FAILURE	2.7466	0.1787	0.1806	0.2321	2.7466	0.1787	0.1806	0.2321	3.4044	0.1665	0.1680	0.2321
202	AMI WITH CARDIAC CATH WITH VENTRICULAR TACHYCARDIA	2.2384	0.2011	0.2011	0.2092	2.2384	0.2011	0.2011	0.2092	2.2384	0.2011	0.2011	0.2092
203	AMI WITH CARDIAC CATH WITH ANGINA	1.6891	0.1617	0.1622	0.2087	1.6891	0.1617	0.1622	0.2087	2.2538	0.1582	0.1586	0.2087
204	AMI WITH CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	1.7424	0.1638	0.1641	0.2193	1.7424	0.1638	0.1641	0.2193	2.2498	0.1485	0.1487	0.2193
205	AMI WITHOUT CARDIAC CATH WITH CONGESTIVE HEART FAILURE	1.5548	0.1628	0.1699	0.2140	1.5548	0.1628	0.1699	0.2140	1.8696	0.1335	0.1374	0.2140
206	AMI WITHOUT CARDIAC CATH WITH VENTRICULAR TACHYCARDIA	1.2052	0.1722	0.1749	0.2173	1.2052	0.1722	0.1749	0.2173	1.2891	0.1322	0.1335	0.2173
207	AMI WITHOUT CARDIAC CATH WITH ANGINA	1.0422	0.1420	0.1429	0.1889	1.0422	0.1420	0.1429	0.1889	1.0492	0.1379	0.1386	0.1889
208	AMI WITHOUT CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	1.0327	0.1421	0.1550	0.2063	1.0327	0.1374	0.1488	0.2063	1.2108	0.1187	0.1246	0.2063
210	UNSTABLE ANGINA WITH CARDIAC CATH WITH SPECIFIED CARDIAC CONDITIONS	1.9046	0.1556	0.1560	0.1979	1.9046	0.1556	0.1560	0.1979	2.2508	0.1459	0.1463	0.1979
211	UNSTABLE ANGINA WITH CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	1.2433	0.1183	0.1185	0.1604	1.2433	0.1141	0.1141	0.1604	1.6545	0.1241	0.1242	0.1604
212	UNSTABLE ANGINA WITHOUT CARDIAC CATH WITH SPECIFIED CARDIAC CONDITIONS	1.0159	0.1306	0.1320	0.1933	1.0159	0.1306	0.1320	0.1933	0.9519	0.1109	0.1115	0.1933
213	UNSTABLE ANGINA WITHOUT CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	0.6771	0.1191	0.1196	0.2363	0.6771	0.1191	0.1196	0.2363	0.8078	0.1095	0.1097	0.2363
215	CARDIAC CATH WITH CONGESTIVE HEART FAILURE	1.9188	0.1637	0.1648	0.1872	1.9188	0.1637	0.1648	0.1872	1.8066	0.1465	0.1474	0.1872
216	CARDIAC CATH WITH VENTRICULAR TACHYCARDIA	1.3279	0.2218	0.2221	0.1927	1.3279	0.2218	0.2221	0.1927	1.2296	0.1841	0.1843	0.1927
217	CARDIAC CATH WITH UNSTABLE ANGINA	0.8082	0.1882	0.1884	0.2082	0.8082	0.1882	0.1884	0.2082	0.8450	0.1772	0.1775	0.2082
218	CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	0.6565	0.3048	0.3063	0.2726	0.5799	0.2059	0.2067	0.2726	0.5485	0.1948	0.1956	0.2726
219	ENDOCARDITIS	2.3257	0.1193	0.1214	0.1817	2.3257	0.1193	0.1214	0.1817	2.3257	0.1193	0.1214	0.1817
220	PULMONARY EMBOLISM	0.9630	0.1150	0.1158	0.1706	0.9630	0.1153	0.1161	0.1706	1.3205	0.1089	0.1095	0.1706
222	HEART FAILURE	1.0594	0.1473	0.1543	0.1999	1.0993	0.1265	0.1306	0.1999	1.3118	0.1052	0.1061	0.1999
225	HYPERTENSIVE HEART DISEASE	0.8547	0.1477	0.1539	0.1708	0.8547	0.1457	0.1517	0.1708	1.0287	0.1229	0.1260	0.1708
226	OTHER CIRCULATORY DIAGNOSES	1.1042	0.1668	0.1714	0.2071	0.8075	0.1511	0.1546	0.2071	1.0349	0.1208	0.1223	0.2071
229	ATHEROSCLEROSIS (MNRH)	0.6970	0.1660	0.1739	0.1859	0.6970	0.1660	0.1739	0.1859	0.8721	0.1243	0.1273	0.1859
232	ACQUIRED VALVULAR DISORDERS (MNRH)	0.9033	0.1159	0.1171	0.2113	0.9318	0.1154	0.1167	0.2113	1.1614	0.1150	0.1162	0.2113
233	HYPERTENSION (MNRH)	0.7002	0.1345	0.1381	0.2374	0.7696	0.1379	0.1417	0.2374	0.7949	0.0951	0.0951	0.2374
234	CONGENITAL CARDIAC DISORDERS (MNRH)	1.0236	0.1497	0.1530	0.2719	1.0277	0.1497	0.1530	0.2719	1.0533	0.1497	0.1530	0.2719
235	ANGINA PECTORIS	0.5970	0.1077	0.1079	0.2647	0.5970	0.1077	0.1079	0.2647	0.6946	0.1070	0.1071	0.2647
237	ARRHYTHMIA	0.4536	0.1503	0.1547	0.2148	0.5976	0.1414	0.1451	0.2148	0.7379	0.1147	0.1161	0.2148

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
240	SYNCOPE AND COLLAPSE	0.4704	0.1236	0.1268	0.1877	0.4565	0.1234	0.1265	0.1877	0.5631	0.0987	0.0987	0.1877
242	CHEST PAIN	0.3834	0.1408	0.1414	0.2609	0.3990	0.1407	0.1413	0.2609	0.5499	0.1291	0.1296	0.2609
250	EXTENSIVE GASTROINTESTINAL PROCEDURES	4.1245	0.2842	0.2872	0.3409	4.1245	0.2842	0.2872	0.3409	4.1245	0.2842	0.2872	0.3409
251	GASTROSTOMY AND COLOSTOMY PROCEDURES	2.4793	0.2330	0.2460	0.2603	3.2188	0.1744	0.1817	0.2603	3.7767	0.1702	0.1770	0.2603
252	MAJOR ESOPHAGEAL, STOMACH AND DUODENUM PROCEDURES	2.6763	0.1926	0.1963	0.2341	2.6763	0.1926	0.1963	0.2341	2.8501	0.1982	0.2021	0.2341
253	MAJOR INTESTINAL AND RECTAL PROCEDURES	1.6980	0.2030	0.2062	0.2282	1.7272	0.1656	0.1676	0.2282	2.3032	0.1650	0.1670	0.2282
255	LESS EXTENSIVE ESOPHAGEAL, STOMACH AND DUODENUM PROCEDURES	1.4225	0.2169	0.2193	0.2340	1.3020	0.1951	0.1971	0.2340	1.7423	0.1910	0.1929	0.2340
258	LAPAROTOMY	1.3168	0.2011	0.2037	0.2376	1.2509	0.1684	0.1702	0.2376	1.6963	0.1472	0.1484	0.2376
260	LESS EXTENSIVE INTESTINAL AND RECTAL PROCEDURES	0.7803	0.1671	0.1680	0.2681	0.7610	0.1644	0.1652	0.2681	0.9975	0.1587	0.1595	0.2681
261	COMPLICATED APPENDECTOMY	1.1358	0.1629	0.1630	0.2303	0.8393	0.1565	0.1566	0.2303	1.3474	0.1818	0.1819	0.2303
262	SIMPLE APPENDECTOMY	0.7557	0.1934	0.1934	0.3353	0.7356	0.1930	0.1930	0.3353	1.0067	0.1486	0.1486	0.3353
264	MINOR GASTROINTESTINAL PROCEDURES	0.9396	0.2099	0.2110	0.2643	0.8938	0.1910	0.1919	0.2643	0.8970	0.2199	0.2211	0.2643
265	ABDOMINAL LAPAROSCOPY	0.6108	0.1776	0.1776	0.2534	0.6108	0.1780	0.1780	0.2534	0.6473	0.1566	0.1566	0.2534
266	ANUS AND STOMAL PROCEDURES (MNRH)	0.5593	0.2025	0.2064	0.2730	0.5528	0.1569	0.1592	0.2730	0.6783	0.1416	0.1431	0.2730
269	BILATERAL HERNIA PROCEDURES	0.6929	0.2847	0.2867	0.3555	0.8962	0.1896	0.1906	0.3555	0.8049	0.1752	0.1760	0.3555
271	UNILATERAL HERNIA PROCEDURES (MNRH)	0.5373	0.3014	0.3023	0.1969	0.5665	0.2168	0.2174	0.1969	0.5973	0.1626	0.1630	0.1969
279	DIGESTIVE SYSTEM MALIGNANCY	1.0178	0.1292	0.1328	0.1621	1.1364	0.1279	0.1312	0.1621	1.0584	0.1068	0.1077	0.1621
281	G.I. HEMORRHAGE	0.4298	0.1411	0.1441	0.1549	0.5361	0.1326	0.1349	0.1549	0.6469	0.1110	0.1119	0.1549
285	COMPLICATED ULCER	0.6624	0.1222	0.1239	0.1467	0.6624	0.1231	0.1248	0.1467	0.8112	0.1115	0.1124	0.1467
286	UNCOMPLICATED ULCER	0.5799	0.1075	0.1078	0.1556	0.5799	0.1085	0.1088	0.1556	0.5457	0.0848	0.0848	0.1556
289	INFLAMMATORY BOWEL DISEASE	1.1123	0.1422	0.1426	0.1790	0.9023	0.1036	0.1036	0.1790	1.3046	0.1075	0.1076	0.1790
290	G.I. OBSTRUCTION	0.4838	0.1435	0.1450	0.1723	0.5717	0.1059	0.1061	0.1723	0.7711	0.1116	0.1121	0.1723
294	ESOPHAGITIS, GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE DISEASE	0.3738	0.1270	0.1281	0.1821	0.4764	0.1118	0.1124	0.1821	0.6566	0.1076	0.1079	0.1821
297	OTHER G.I. DIAGNOSES	0.5472	0.1978	0.2031	0.2072	0.7643	0.1255	0.1270	0.2072	0.8419	0.1176	0.1186	0.2072
310	LIVER TRANSPLANT	6.6548	0.3889	0.3889	0.4182	6.9698	0.3889	0.3889	0.4182	6.9698	0.3889	0.3889	0.4182
311	MAJOR PANCREATIC PROCEDURES	2.8794	0.2312	0.2347	0.2382	2.8794	0.2223	0.2256	0.2382	3.5875	0.1844	0.1867	0.2382
312	MAJOR HEPATOBILIARY PROCEDURES	2.6867	0.2400	0.2422	0.3317	2.6867	0.2400	0.2422	0.3317	2.6867	0.2400	0.2422	0.3317
313	COMMON DUCT EXPLORATION	1.7569	0.1683	0.1704	0.2043	1.7569	0.1683	0.1704	0.2043	1.7569	0.1683	0.1704	0.2043
314	OTHER HEPATOBILIARY AND PANCREATIC PROCEDURES	1.6514	0.1772	0.1825	0.2022	1.7942	0.1676	0.1723	0.2022	1.5155	0.1343	0.1366	0.2022
315	CHOLECYSTECTOMY	1.6211	0.1736	0.1753	0.2540	1.2942	0.1692	0.1707	0.2540	1.5621	0.1517	0.1528	0.2540
317	LAPAROSCOPIC CHOLECYSTECTOMY	0.6288	0.2483	0.2496	0.3403	0.6879	0.1884	0.1891	0.3403	0.9591	0.1856	0.1863	0.3403
320	MISCELLANEOUS HEPATOBILIARY AND PANCREATIC PROCEDURES	1.9963	0.1788	0.1835	0.2496	1.9963	0.1788	0.1835	0.2496	1.9963	0.1788	0.1835	0.2496
323	CIRRHOSIS AND ALCOHOLIC HEPATITIS	1.0488	0.1419	0.1467	0.1514	1.0488	0.1318	0.1354	0.1514	0.9697	0.1135	0.1151	0.1514
324	PANCREATIC CANCER OR OTHER MALIGNANCY OF HEPATOBILIARY SYSTEM	1.0282	0.1414	0.1465	0.1639	1.0984	0.1282	0.1317	0.1639	1.3525	0.1147	0.1167	0.1639
325	PANCREAS DISEASES EXCEPT MALIGNANCY	0.5971	0.1228	0.1233	0.1517	0.6653	0.1285	0.1292	0.1517	0.8820	0.1154	0.1158	0.1517
326	LIVER DISEASES EXCEPT CIRRHOSIS OR CANCER	0.5714	0.1855	0.1984	0.1607	0.9339	0.1280	0.1324	0.1607	0.8326	0.1222	0.1256	0.1607
329	BILIARY TRACT DISEASES	0.7232	0.1693	0.1721	0.1792	0.5862	0.1244	0.1254	0.1792	0.8348	0.1191	0.1199	0.1792
350	MULTIPLE OR BILATERAL JOINT REPLACEMENT	3.2729	0.2815	0.3075	0.5060	3.2729	0.2815	0.3075	0.5060	3.1741	0.2547	0.2768	0.5060
351	JOINT REPLACEMENT FOR TRAUMA	2.6975	0.1818	0.2091	0.2858	2.6975	0.1818	0.2091	0.2858	2.8675	0.1438	0.1585	0.2858
352	HIP REPLACEMENT	1.9547	0.2739	0.2851	0.3642	1.9432	0.2748	0.2861	0.3642	2.1330	0.2306	0.2390	0.3642
354	KNEE REPLACEMENT	1.7711	0.3016	0.3096	0.3738	1.8501	0.2720	0.2789	0.3738	1.9979	0.2541	0.2601	0.3738
355	REATTACHMENT PROCEDURES OR LOWER EXTREMITY OR SHOULDER AMPUTATIONS	2.0364	0.1604	0.1714	0.2987	2.3346	0.1463	0.1547	0.2987	2.3096	0.1183	0.1218	0.2987
356	REPAIR HIP AND FEMUR PROCEDURES	1.1513	0.2529	0.2811	0.3151	1.7339	0.1696	0.1825	0.3151	2.4389	0.1312	0.1372	0.3151
358	LOWER EXTREMITY PROCEDURES WITH INFECTION	1.2395	0.1723	0.1740	0.1947	1.1195	0.1686	0.1702	0.1947	1.1263	0.1640	0.1655	0.1947
359	UPPER EXTREMITY PROCEDURES WITH INFECTION	1.7156	0.1539	0.1573	0.3674	1.8728	0.1480	0.1509	0.3674	1.9272	0.1521	0.1554	0.3674
360	UPPER EXTREMITY AMPUTATIONS AND REVISIONS	1.3521	0.1597	0.1646	0.1925	1.4370	0.1518	0.1559	0.1925	1.4897	0.1440	0.1476	0.1925
361	MUSCULOSKELETAL BIOPSY FOR MALIGNANCY	1.4925	0.1413	0.1448	0.1887	1.4353	0.1431	0.1467	0.1887	1.4652	0.1197	0.1214	0.1887
362	MUSCULOSKELETAL BIOPSY WITHOUT MALIGNANCY	1.2100	0.1714	0.1779	0.1716	1.2691	0.1513	0.1560	0.1716	1.6336	0.1181	0.1198	0.1716
363	BACK AND NECK PROCEDURES WITH FUSION	2.0068	0.3772	0.3889	0.4616	1.6611	0.3199	0.3291	0.4616	2.1103	0.2555	0.2620	0.4616
365	BACK AND NECK PROCEDURES WITHOUT FUSION	1.0265	0.2445	0.2509	0.4326	0.9868	0.2414	0.2477	0.4326	1.4642	0.1852	0.1890	0.4326
367	SHOULDER ARTHROPLASTY	1.3095	0.3744	0.3889	0.5060	1.3095	0.3744	0.3889	0.5060	1.4843	0.3254	0.3373	0.5060
368	MAJOR HIP AND KNEE PROCEDURES	1.1242	0.2133	0.2221	0.3272	1.3733	0.1950	0.2024	0.3272	1.4870	0.1771	0.1832	0.3272
369	MAJOR LOWER EXTREMITY PROCEDURES	0.9539	0.2973	0.3040	0.4084	1.0978	0.2386	0.2433	0.4084	1.3981	0.2035	0.2071	0.4084
372	MAJOR UPPER EXTREMITY PROCEDURES	0.6519	0.3808	0.3879	0.4684	0.8151	0.3114	0.3168	0.4684	1.0067	0.2258	0.2291	0.4684
374	MINOR LOWER EXTREMITY PROCEDURES	0.6453	0.3681	0.3763	0.4971	0.7123	0.2998	0.3059	0.4971	0.8876	0.1880	0.1907	0.4971
375	MINOR UPPER EXTREMITY PROCEDURES	0.6178	0.3657	0.3724	0.5060	0.6878	0.3066	0.3118	0.5060	0.6895	0.2409	0.2445	0.5060
376	MISCELLANEOUS MUSCULOSKELETAL PROCEDURES	1.7048	0.3862	0.3889	0.4498	0.9048	0.3025	0.3044	0.4498	1.2887	0.2835	0.2851	0.4498
377	WOUND DEBRIDEMENT AND SKIN GRAFT FOR MUSCULOSKELETAL DISORDERS	0.8361	0.2056	0.2093	0.3576	1.1135	0.1655	0.1678	0.3576	1.5836	0.1653	0.1677	0.3576
378	SOFT TISSUE PROCEDURES (MNRH)	0.9638	0.2457	0.2740	0.3431	1.0924	0.1854	0.2021	0.3431	1.1335	0.1785	0.1938	0.3431
379	OTHER MUSCULOSKELETAL PROCEDURES (MNRH)	0.7307	0.3318	0.3465	0.4004	0.7663	0.2093	0.2163	0.4004	1.0061	0.1161	0.1172	0.4004

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
380	OTHER LOWER EXTREMITY PROCEDURES (MNRH)	0.6415	0.3882	0.3889	0.4001	0.5563	0.2335	0.2339	0.4001	0.6006	0.2026	0.2028	0.4001
381	HAND AND WRIST PROCEDURES (MNRH)	0.5817	0.3158	0.3158	0.4474	0.5817	0.3158	0.3158	0.4474	0.5817	0.3158	0.3158	0.4474
382	ARTHROSCOPY (MNRH)	0.5233	0.1884	0.1925	0.1595	0.4793	0.1884	0.1925	0.1595	0.4846	0.1884	0.1925	0.1595
383	JOINT REPLACEMENT FOR MALIGNANCY	4.1775	0.1841	0.1948	0.3071	4.1775	0.1841	0.1948	0.3071	4.1775	0.1841	0.1948	0.3071
384	BACK AND NECK PROCEDURES FOR MALIGNANCY	5.6641	0.2179	0.2353	0.3702	5.6641	0.2179	0.2353	0.3702	5.6641	0.2179	0.2353	0.3702
385	MAJOR ORTHOPAEDIC ONCOLOGY PROCEDURES	2.6354	0.1879	0.2038	0.3032	2.4230	0.1829	0.1980	0.3032	2.7482	0.1838	0.1991	0.3032
386	OTHER ORTHOPAEDIC ONCOLOGY PROCEDURES	0.8436	0.1861	0.1879	0.2261	0.8833	0.1763	0.1779	0.2261	1.1626	0.1693	0.1707	0.2261
391	SECONDARY NEOPLASMS AND PATHOLOGICAL FRACTURES	1.3652	0.1170	0.1208	0.1697	1.5801	0.1152	0.1187	0.1697	1.7254	0.1012	0.1016	0.1697
392	OSTEOMYELITIS	1.2471	0.1338	0.1383	0.1792	1.8041	0.1141	0.1161	0.1792	1.7864	0.1073	0.1085	0.1792
393	RHEUMATOID ARTHRITIS	1.1995	0.1446	0.1511	0.1974	1.3847	0.1469	0.1538	0.1974	1.3853	0.1167	0.1192	0.1974
394	SEPTIC ARTHRITIS	0.9144	0.1330	0.1368	0.1425	0.8988	0.1397	0.1443	0.1425	0.9012	0.1136	0.1153	0.1425
397	NON-INFLAMMATORY ARTHRITIS	0.7512	0.1229	0.1307	0.1456	0.7512	0.1229	0.1307	0.1456	0.9255	0.0852	0.0852	0.1456
398	OTHER INFLAMMATORY ARTHRITIS	0.7472	0.1511	0.1568	0.1699	0.9722	0.1331	0.1370	0.1699	1.0075	0.1035	0.1040	0.1699
399	ORTHOPAEDIC AFTERCARE	0.5723	0.1135	0.1287	0.1524	0.6153	0.1093	0.1200	0.1524	0.9758	0.0964	0.0964	0.1524
401	OTHER MUSCULOSKELETAL MALIGNANCIES	1.1879	0.1684	0.1721	0.1889	1.1392	0.1294	0.1311	0.1889	1.1628	0.1197	0.1208	0.1889
402	DISC DISEASE	0.6306	0.1014	0.1017	0.1331	0.6557	0.0960	0.0960	0.1331	0.7610	0.0932	0.0932	0.1331
404	OTHER MUSCULOSKELETAL INFECTIONS	2.1147	0.1145	0.1156	0.2094	2.1147	0.1145	0.1156	0.2094	2.1147	0.1145	0.1156	0.2094
407	OTHER MUSCULOSKELETAL DISORDERS	0.7043	0.1392	0.1427	0.2430	0.6699	0.1392	0.1427	0.2430	0.9827	0.1392	0.1427	0.2430
409	BACK PAIN (MNRH)	0.4289	0.1205	0.1220	0.1538	0.5204	0.1094	0.1102	0.1538	0.7506	0.0931	0.0931	0.1538
411	SIGNS, SYMPTOMS AND DEFORMITIES (MNRH)	0.4302	0.1362	0.1436	0.1639	0.4758	0.1144	0.1176	0.1639	0.6768	0.0998	0.0998	0.1639
413	JOINT DERANGEMENTS (MNRH)	0.4637	0.1180	0.1190	0.1902	0.4653	0.1180	0.1190	0.1902	0.4814	0.1180	0.1190	0.1902
414	SPRAINS STRAINS AND MINOR INJURIES (MNRH)	0.3541	0.1096	0.1125	0.1766	0.4755	0.1136	0.1176	0.1766	0.5421	0.1041	0.1054	0.1766
425	SKIN GRAFT AND WOUND DEBRIDEMENT FOR DERMATOLOGIC DIS EXCEPT ULCER OR CELLULITIS	0.5846	0.2249	0.2261	0.4241	0.5665	0.2353	0.2367	0.4241	0.6755	0.2276	0.2288	0.4241
427	SKIN GRAFT AND WOUND DEBRIDEMENT FOR SKIN ULCER OR CELLULITIS	2.8226	0.1309	0.1367	0.1808	3.2326	0.1239	0.1285	0.1808	4.0409	0.1058	0.1070	0.1808
428	BREAST PROCEDURES EXCEPT BIOPSY AND LOCAL EXCISION WITHOUT MALIGNANCY	0.6941	0.3310	0.3310	0.5060	0.6941	0.3310	0.3310	0.5060	0.6941	0.3310	0.3310	0.5060
429	TOTAL MASTECTOMY FOR BREAST MALIGNANCY	0.5653	0.2977	0.3023	0.3554	0.5653	0.2977	0.3023	0.3554	0.6320	0.2408	0.2441	0.3554
432	SUBTOTAL MASTECTOMY AND OTHER BREAST PROCEDURES FOR MALIGNANCY	0.5430	0.3104	0.3151	0.4232	0.5430	0.3104	0.3151	0.4232	0.5705	0.2998	0.3043	0.4232
434	BREAST BIOPSY AND LOCAL EXCISION WITHOUT MALIGNANCY	0.4108	0.2720	0.2720	0.3734	0.4108	0.2720	0.2720	0.3734	0.4108	0.2720	0.2720	0.3734
435	PERIANAL AND PILONIDAL CYST PROCEDURES	0.6373	0.1861	0.1861	0.3983	0.6373	0.1861	0.1861	0.3983	0.6373	0.1861	0.1861	0.3983
436	PLASTIC SURGERY	0.6211	0.2902	0.3068	0.4731	0.6526	0.2979	0.3152	0.4731	0.6513	0.2943	0.3113	0.4731
437	OTHER DERMATOLOGICAL PROCEDURES WITHOUT MALIGNANCY OR SKIN ULCER OR CELLULITIS	0.6747	0.1815	0.1833	0.2746	0.7751	0.1939	0.1960	0.2746	0.7790	0.1842	0.1860	0.2746
438	OTHER DERMATOLOGICAL PROCEDURES FOR MALIGNANCY OR SKIN ULCER OR CELLULITIS	1.1708	0.1485	0.1578	0.2664	1.1218	0.1505	0.1602	0.2664	1.6327	0.1331	0.1395	0.2664
439	SKIN ULCER	1.5606	0.1048	0.1066	0.1643	1.5606	0.1048	0.1066	0.1643	1.5606	0.1048	0.1066	0.1643
440	MAJOR SKIN DISORDERS	0.6955	0.1315	0.1344	0.1723	0.7654	0.1285	0.1311	0.1723	0.9847	0.1078	0.1086	0.1723
443	MALIGNANT BREAST DISORDERS	1.2156	0.1260	0.1280	0.1754	1.2156	0.1260	0.1280	0.1754	1.7506	0.1039	0.1042	0.1754
446	NON-MALIGNANT BREAST DISORDERS	0.3962	0.1136	0.1136	0.1585	0.3962	0.1136	0.1136	0.1585	0.3962	0.1136	0.1136	0.1585
447	CELLULITIS	0.5884	0.1190	0.1209	0.1632	0.7289	0.1087	0.1096	0.1632	0.8934	0.0970	0.0970	0.1632
452	TRAUMA OF SKIN, SUBCUTANEOUS TISSUE AND BREAST	0.4329	0.1420	0.1478	0.2234	0.4644	0.1420	0.1478	0.2234	0.6790	0.1420	0.1478	0.2234
454	MINOR SKIN DISORDERS	0.4500	0.1365	0.1382	0.1844	0.6041	0.1082	0.1087	0.1844	0.7117	0.1053	0.1057	0.1844
476	ADRENAL AND PITUITARY PROCEDURES	1.9227	0.3219	0.3260	0.3863	1.6777	0.2905	0.2940	0.3863	1.8596	0.2594	0.2624	0.3863
477	PARATHYROID PROCEDURES	0.6735	0.2196	0.2268	0.3545	0.6735	0.2196	0.2268	0.3545	0.6735	0.2196	0.2268	0.3545
478	OBESITY PROCEDURES	0.9771	0.2501	0.2503	0.3619	0.9771	0.2501	0.2503	0.3619	0.9771	0.2501	0.2503	0.3619
479	THYROID PROCEDURES	0.6591	0.2662	0.2662	0.4028	0.6855	0.2682	0.2682	0.4028	0.8204	0.2719	0.2719	0.4028
480	THYROID GLOSSAL PROCEDURES	0.5220	0.3013	0.3013	0.4016	0.5220	0.3013	0.3013	0.4016	0.5220	0.3013	0.3013	0.4016
482	OTHER ENDOCRINE, NUTRITION AND METABOLIC PROCEDURES	1.4822	0.1958	0.2142	0.1422	1.7083	0.1686	0.1818	0.1422	1.7337	0.1552	0.1660	0.1422
483	DIABETES	0.6066	0.1423	0.1481	0.1964	0.8086	0.1253	0.1288	0.1964	1.0251	0.1003	0.1005	0.1964
485	NUTRITIONAL AND MISCELLANEOUS METABOLIC DISORDERS	0.4863	0.1233	0.1297	0.1864	0.6981	0.1155	0.1199	0.1864	0.8603	0.0983	0.0983	0.1864
487	CYSTIC FIBROSIS	1.7458	0.1929	0.1942	0.2156	2.7298	0.1677	0.1686	0.2156	2.7487	0.1625	0.1633	0.2156
488	INBORN ERRORS OF METABOLISM	0.6344	0.1743	0.1761	0.1614	0.5625	0.1743	0.1761	0.1614	0.5625	0.1743	0.1761	0.1614
489	ENDOCRINE DISORDERS	0.5630	0.1603	0.1656	0.1529	0.4408	0.1233	0.1254	0.1529	0.7412	0.0953	0.0953	0.1529
500	KIDNEY TRANSPLANT	3.9664	0.3123	0.3123	0.3988	4.1782	0.3161	0.3161	0.3988	4.1806	0.3131	0.3131	0.3988
501	URINARY DIVERSION AND AUGMENTATION	2.8548	0.2623	0.2643	0.3163	3.1732	0.2523	0.2542	0.3163	3.5263	0.2446	0.2464	0.3163
502	RADICAL PROSTATECTOMY	1.1668	0.2656	0.2656	0.2877	1.1668	0.2656	0.2656	0.2877	1.1160	0.2464	0.2464	0.2877
503	DIALYSIS PROCEDURES	1.7593	0.1813	0.1953	0.2285	1.8989	0.1748	0.1877	0.2285	2.2114	0.1318	0.1374	0.2285
504	MAJOR URINARY TRACT PROCEDURES	1.8074	0.2252	0.2296	0.3070	1.3888	0.2335	0.2381	0.3070	1.7022	0.2132	0.2172	0.3070
505	RECONSTRUCTIVE UROLOGICAL PROCEDURES	1.0515	0.2009	0.2055	0.3122	1.0515	0.2009	0.2055	0.3122	1.0329	0.1823	0.1861	0.3122
506	OPEN PROSTATECTOMY	0.8968	0.2126	0.2159	0.2360	0.8968	0.2126	0.2159	0.2360	0.8968	0.2126	0.2159	0.2360
507	VASCULAR AND OTHER URINARY PROCEDURES	0.6328	0.1748	0.1826	0.2118	0.5587	0.1743	0.1822	0.2118	0.7700	0.1575	0.1635	0.2118
508	MINOR UPPER URINARY TRACT PROCEDURES	1.2874	0.2030	0.2094	0.2878	1.1639	0.1953	0.2012	0.2878	1.4194	0.1426	0.1453	0.2878
509	MINOR LOWER URINARY TRACT PROCEDURES	0.8485	0.1910	0.1952	0.3113	0.8710	0.1800	0.1837	0.3113	0.7879	0.1572	0.1597	0.3113

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
510	TRANSURETHRAL PROSTATECTOMY	0.7542	0.1884	0.1928	0.3409	0.7542	0.1884	0.1928	0.3409	0.7134	0.1476	0.1500	0.3409
512	OTHER TRANSURETHRAL OR BIOPSY PROCEDURES (MNRH)	0.4419	0.2128	0.2153	0.3078	0.4375	0.2071	0.2094	0.3078	0.5529	0.1721	0.1736	0.3078
514	MISCELLANEOUS URINARY TRACT PROCEDURES (MNRH)	0.4669	0.1531	0.1531	0.2593	0.4669	0.1531	0.1531	0.2593	0.4669	0.1531	0.1531	0.2593
520	RENAL FAILURE WITH DIALYSIS	1.8267	0.1530	0.1638	0.1714	1.9294	0.1534	0.1643	0.1714	2.3928	0.1363	0.1437	0.1714
521	RENAL FAILURE WITHOUT DIALYSIS	0.9531	0.1243	0.1333	0.1777	0.9725	0.1214	0.1293	0.1777	1.3589	0.1072	0.1102	0.1777
522	URINARY NEOPLASM	0.8714	0.1253	0.1302	0.1604	0.9048	0.1222	0.1265	0.1604	1.0582	0.1154	0.1185	0.1604
524	NEPHROTIC SYNDROME	0.5052	0.1209	0.1215	0.1331	0.8094	0.1229	0.1236	0.1331	0.7868	0.1228	0.1235	0.1331
525	NEPHROPATHY WITHOUT NEPHROTIC SYNDROME	0.7066	0.1480	0.1504	0.1809	0.9734	0.1592	0.1623	0.1809	0.9605	0.1517	0.1543	0.1809
526	MISCELLANEOUS NEPHROLOGICAL DIAGNOSIS	1.1898	0.1613	0.1621	0.1983	1.1898	0.1613	0.1621	0.1983	1.1898	0.1613	0.1621	0.1983
527	UPPER URINARY TRACT INFECTION	0.6498	0.1306	0.1315	0.1878	0.6271	0.1151	0.1155	0.1878	0.6307	0.1005	0.1005	0.1878
529	LOWER URINARY TRACT INFECTION	0.6979	0.1202	0.1238	0.1961	0.7152	0.1311	0.1365	0.1961	0.9796	0.1135	0.1160	0.1961
532	URINARY RETENTION AND OTHER FUNCTIONAL DISORDERS OF BLADDER	0.4842	0.1272	0.1318	0.1829	0.5224	0.1159	0.1186	0.1829	0.6735	0.0969	0.0969	0.1829
534	MISCELLANEOUS UROLOGICAL DIAGNOSES (MNRH)	0.4913	0.1414	0.1446	0.1910	0.5426	0.1457	0.1910	0.1910	0.5556	0.1210	0.1226	0.1910
535	HEMATURIA (MNRH)	0.3941	0.1483	0.1508	0.1725	0.4470	0.1568	0.1597	0.1725	0.4347	0.1044	0.1048	0.1725
536	URINARY OBSTRUCTION (MNRH)	0.4195	0.1357	0.1363	0.2340	0.4506	0.1380	0.1385	0.2340	0.4324	0.1224	0.1227	0.2340
538	ADMISSION FOR DIALYSIS (MNRH)	0.4596	0.1431	0.1431	0.3536	0.4596	0.1431	0.1431	0.3536	0.4596	0.1431	0.1431	0.3536
550	MAJOR PELVIC AND RETROPERITONEUM PROCEDURES	1.9677	0.2840	0.2840	0.4100	1.9677	0.2840	0.2840	0.4100	1.9677	0.2840	0.2840	0.4100
551	PENIS PROCEDURES	0.6766	0.2662	0.2662	0.5060	0.8275	0.2584	0.2584	0.5060	0.9059	0.2398	0.2398	0.5060
552	TESTES PROCEDURES	0.4743	0.2476	0.2554	0.3663	0.5276	0.2210	0.2275	0.3663	0.4520	0.1662	0.1698	0.3663
554	MISCELLANEOUS MALE REPRODUCTIVE SYSTEM PROCEDURES (MNRH)	0.4366	0.2551	0.2614	0.3638	0.4366	0.2551	0.2614	0.3638	0.4366	0.2551	0.2614	0.3638
555	CIRCUMCISION (MNRH)	0.4868	0.2259	0.2308	0.4003	0.4869	0.2259	0.2308	0.4003	0.4145	0.2259	0.2308	0.4003
560	MALIGNANCY OF MALE REPRODUCTIVE ORGAN	1.3057	0.1905	0.2061	0.2560	1.3057	0.1905	0.2061	0.2560	1.3057	0.1905	0.2061	0.2560
561	MALE REPRODUCTIVE SYSTEM INFLAMMATION	0.4725	0.1153	0.1169	0.1685	0.5184	0.1160	0.1177	0.1685	0.6428	0.1217	0.1239	0.1685
562	OTHER MALE REPRODUCTIVE SYSTEM DIAGNOSES	0.3607	0.1085	0.1089	0.1592	0.3658	0.1085	0.1089	0.1592	0.3648	0.1085	0.1089	0.1592
563	MISCELLANEOUS MALE REPRODUCTIVE SYSTEM DIAGNOSES (MNRH)	0.1642	0.1482	0.1482	0.1331	0.1642	0.1482	0.1482	0.1331	0.1642	0.1482	0.1482	0.1331
575	PELVIC EXENTERATION	7.7122	0.2442	0.2442	0.3442	7.7122	0.2442	0.2442	0.3442	7.7122	0.2442	0.2442	0.3442
576	RADICAL HYSTERECTOMY AND VULVECTOMY	1.1460	0.2214	0.2221	0.2985	1.1460	0.2214	0.2221	0.2985	1.1859	0.2108	0.2114	0.2985
577	MAJOR GYNECOLOGICAL PROCEDURES FOR OVARIAN OR ADNEXAL MALIGNANCY	1.3334	0.2031	0.2038	0.2869	1.3310	0.2052	0.2059	0.2869	1.5890	0.1886	0.1892	0.2869
578	MAJOR GYNECOLOGICAL PROCEDURES FOR MALIGNANCY EXCEPT OVARIAN OR ADNEXAL	0.9540	0.1869	0.1938	0.2859	0.9540	0.1873	0.1943	0.2859	1.1615	0.1798	0.1862	0.2859
579	MAJOR UTERINE AND ADNEXAL PROCEDURES WITHOUT MALIGNANCY	0.7275	0.2113	0.2116	0.3015	0.9069	0.1722	0.1723	0.3015	1.0598	0.1730	0.1731	0.3015
581	RECONSTRUCTIVE GYNECOLOGICAL PROCEDURES	0.7873	0.1609	0.1609	0.2997	0.7873	0.1600	0.1600	0.2997	0.8698	0.1564	0.1564	0.2997
582	OTHER GYNECOLOGICAL PROCEDURES	1.0368	0.1996	0.2017	0.3420	1.0674	0.1960	0.1980	0.3420	1.0748	0.1965	0.1985	0.3420
583	RADIO-IMPLANT FOR MALIGNANCY	0.4368	0.1264	0.1264	0.1493	0.4368	0.1264	0.1264	0.1493	0.4368	0.1228	0.1228	0.1493
584	VAGINA, CERVIX AND VULVA PROCEDURES	0.4260	0.1843	0.1846	0.3089	0.4543	0.1833	0.1836	0.3089	0.5833	0.1891	0.1895	0.3089
585	GYNECOLOGICAL LAPAROSCOPY (MNRH)	0.4709	0.2070	0.2070	0.3364	0.4709	0.2070	0.2070	0.3364	0.4709	0.2070	0.2070	0.3364
586	TUBAL INTERRUPTION (MNRH)	0.4344	0.1842	0.1842	0.3621	0.4344	0.1842	0.1842	0.3621	0.4344	0.1842	0.1842	0.3621
587	MISCELLANEOUS GYNECOLOGICAL PROCEDURES (MNRH)	0.3130	0.1506	0.1515	0.2564	0.3183	0.1451	0.1459	0.2564	0.4136	0.1432	0.1440	0.2564
592	MALIGNANCY OF FEMALE REPRODUCTIVE ORGAN	0.8809	0.1297	0.1320	0.1402	0.8809	0.1297	0.1320	0.1402	1.1847	0.1241	0.1260	0.1402
594	FEMALE REPRODUCTIVE SYSTEM INFECTION	0.4579	0.1011	0.1011	0.1652	0.5051	0.0998	0.0998	0.1652	0.5089	0.1052	0.1052	0.1652
595	OTHER FEMALE REPRODUCTIVE SYSTEM DIAGNOSES AND INJURIES	0.3569	0.0960	0.0960	0.1622	0.3569	0.0960	0.0960	0.1622	0.3569	0.0960	0.0960	0.1622
596	MISCELLANEOUS GYNECOLOGICAL DIAGNOSES (MNRH)	0.2339	0.1183	0.1185	0.2247	0.3319	0.1371	0.1372	0.2247	0.3389	0.1290	0.1291	0.2247
599	PREMATURE LABOUR	0.9760	0.1061	0.1061	0.2269	0.9760	0.1061	0.1061	0.2269	0.9760	0.1061	0.1061	0.2269
600	MAJOR PROCEDURES IN PREGNANCY OR CHILDBIRTH	1.6128	0.1902	0.1902	0.3751	1.6128	0.1902	0.1902	0.3751	1.6128	0.1902	0.1902	0.3751
601	REPEAT CAESAREAN DELIVERY WITH COMPLICATING DIAGNOSIS	0.9327	0.1458	0.1458	0.2744	0.9327	0.1458	0.1458	0.2744	0.9327	0.1458	0.1458	0.2744
602	CAESAREAN DELIVERY WITH COMPLICATING DIAGNOSIS	1.2424	0.1570	0.1570	0.3030	1.2424	0.1570	0.1570	0.3030	1.2424	0.1570	0.1570	0.3030
603	REPEAT CAESAREAN DELIVERY	0.7468	0.1365	0.1365	0.2489	0.7468	0.1365	0.1365	0.2489	0.7468	0.1365	0.1365	0.2489
604	CAESAREAN DELIVERY	0.9843	0.1561	0.1561	0.2734	0.9843	0.1561	0.1561	0.2734	0.9843	0.1561	0.1561	0.2734
605	FETAL SURGERY	0.5154	0.1675	0.1675	0.3965	0.5154	0.1675	0.1675	0.3965	0.5154	0.1675	0.1675	0.3965
606	VAGINAL DELIVERY WITH STERILIZATION PROCEDURES	0.7957	0.1659	0.1659	0.2653	0.7957	0.1659	0.1659	0.2653	0.7957	0.1659	0.1659	0.2653
607	VAGINAL DELIVERY WITH MINOR PROCEDURES	0.8786	0.1907	0.1907	0.3514	0.8786	0.1907	0.1907	0.3514	0.8786	0.1907	0.1907	0.3514
608	VAGINAL DELIVERY AFTER CAESAREAN (VBAC) WITH COMPLICATING DIAGNOSIS	0.7319	0.1864	0.1865	0.3485	0.7319	0.1864	0.1865	0.3485	0.7319	0.1864	0.1865	0.3485
609	VAGINAL DELIVERY WITH COMPLICATING DIAGNOSIS	0.8114	0.1773	0.1773	0.3125	0.7197	0.1797	0.1797	0.3125	0.7197	0.1797	0.1797	0.3125
610	VAGINAL DELIVERY AFTER CAESAREAN DELIVERY (VBAC)	0.6153	0.1915	0.1915	0.3238	0.6153	0.1915	0.1915	0.3238	0.6153	0.1915	0.1915	0.3238
611	VAGINAL DELIVERY	0.6228	0.1752	0.1752	0.3100	0.5902	0.1873	0.1873	0.3100	0.5902	0.1873	0.1873	0.3100
612	ECTOPIC PREGNANCY WITH MAJOR PROCEDURES	0.9236	0.2138	0.2138	0.3299	0.9236	0.2138	0.2138	0.3299	0.9236	0.2138	0.2138	0.3299
613	ECTOPIC PREGNANCY WITH MINOR PROCEDURES	0.6473	0.3029	0.3029	0.4624	0.6473	0.3029	0.3029	0.4624	0.6473	0.3029	0.3029	0.4624
614	ECTOPIC PREGNANCY	0.2556	0.1115	0.1115	0.1966	0.2556	0.1115	0.1115	0.1966	0.2556	0.1115	0.1115	0.1966
615	THREATENED ABORTION	0.2291	0.0944	0.0944	0.1637	0.2291	0.0944	0.0944	0.1637	0.2291	0.0944	0.0944	0.1637
616	ABORTIVE OUTCOME WITH INJECTION	0.7788	0.3171	0.3171	0.5060	0.7788	0.3171	0.3171	0.5060	0.7788	0.3171	0.3171	0.5060
617	ABORTIVE OUTCOME WITH D AND C	0.3776	0.2332	0.2332	0.3432	0.3776	0.2332	0.2332	0.3432	0.3776	0.2332	0.2332	0.3432

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
618	ABORTIVE OUTCOME	0.5025	0.2313	0.2313	0.4187	0.5025	0.2313	0.2313	0.4187	0.5025	0.2313	0.2313	0.4187
619	FALSE LABOUR LOS <3 DAYS (MNRH)	0.1879	0.1100	0.1100	0.1566	0.1879	0.1100	0.1100	0.1566	0.1879	0.1100	0.1100	0.1566
620	POST-PARTUM DIAGNOSIS WITH PROCEDURES OTHER THAN D AND C	1.1050	0.2075	0.2075	0.3565	1.1050	0.2075	0.2075	0.3565	1.1050	0.2075	0.2075	0.3565
621	POST-PARTUM DIAGNOSIS WITH D AND C	0.4276	0.1982	0.1982	0.3054	0.4276	0.1982	0.1982	0.3054	0.4276	0.1982	0.1982	0.3054
622	POST-PARTUM DIAGNOSIS	0.4603	0.1112	0.1112	0.2001	0.4603	0.1112	0.1112	0.2001	0.4603	0.1112	0.1112	0.2001
623	ANTEPARTUM DIAGNOSIS WITH COMPLICATING DIAGNOSIS	0.3649	0.0970	0.0970	0.1520	0.3649	0.0970	0.0970	0.1520	0.3649	0.0970	0.0970	0.1520
624	ANTEPARTUM DIAGNOSIS	0.1904	0.0977	0.0977	0.1360	0.1904	0.0977	0.0977	0.1360	0.1904	0.0977	0.0977	0.1360
625	NEONATES WEIGHT <750 GRAMS	25.0995	0.1824	0.1824	0.2495	25.0995	0.1824	0.1824	0.2495	25.0995	0.1824	0.1824	0.2495
626	NEONATES WEIGHT 750-999 GRAMS	20.4358	0.1718	0.1718	0.2343	20.4358	0.1718	0.1718	0.2343	20.4358	0.1718	0.1718	0.2343
627	NEONATES WEIGHT 1000-1499 GM WITH CATASTROPHIC DIAGNOSIS	9.9169	0.1271	0.1271	0.2556	9.9169	0.1271	0.1271	0.2556	9.9169	0.1271	0.1271	0.2556
628	NEONATES WEIGHT 1000-1499 GM WITHOUT CATASTROPHIC DIAGNOSIS	9.1337	0.1518	0.1518	0.2455	9.1337	0.1518	0.1518	0.2455	9.1337	0.1518	0.1518	0.2455
630	NEONATES WEIGHT 1500-1999 GM WITH CATASTROPHIC DIAGNOSIS	3.7242	0.1715	0.1715	0.1390	3.7242	0.1715	0.1715	0.1390	3.7242	0.1715	0.1715	0.1390
631	NEONATES WEIGHT 1500-1999 GM WITH MAJOR PROBLEM DIAGNOSIS	6.1224	0.1468	0.1468	0.2140	6.1224	0.1468	0.1468	0.2140	6.1224	0.1468	0.1468	0.2140
632	NEONATES WEIGHT 1500-1999 GM WITH MOD OR MINOR OR NO PROBLEM DIAGNOSIS	3.0665	0.1220	0.1220	0.1847	3.0665	0.1220	0.1220	0.1847	3.0665	0.1220	0.1220	0.1847
636	NEONATES WEIGHT 2000-2499 GM WITH CATASTROPHIC DIAGNOSIS	5.6978	0.1631	0.1631	0.2522	5.6978	0.1631	0.1631	0.2522	5.6978	0.1631	0.1631	0.2522
637	NEONATES WEIGHT 2000-2499 GM WITH MAJOR PROBLEM DIAGNOSIS	4.3445	0.1841	0.1841	0.2877	4.3445	0.1841	0.1841	0.2877	4.3445	0.1841	0.1841	0.2877
638	NEONATES WEIGHT 2000-2499 GM WITH MODERATE PROBLEM DIAGNOSIS	2.2027	0.1322	0.1322	0.2181	2.2027	0.1322	0.1322	0.2181	2.2027	0.1322	0.1322	0.2181
639	NEONATES WEIGHT 2000-2499 GM WITH MINOR PROBLEM DIAGNOSIS	0.6870	0.0949	0.0949	0.1494	0.6870	0.0949	0.0949	0.1494	0.6870	0.0949	0.0949	0.1494
640	NEONATES WEIGHT 2000-2499 GM WITH NO PROBLEM DIAGNOSIS	0.2511	0.0661	0.0661	0.1331	0.2511	0.0661	0.0661	0.1331	0.2511	0.0661	0.0661	0.1331
643	NEONATES WEIGHT >2500 GM WITH CATASTROPHIC DIAGNOSIS	4.4521	0.2420	0.2420	0.2988	4.4521	0.2420	0.2420	0.2988	4.4521	0.2420	0.2420	0.2988
644	NEONATES WEIGHT >2500 GM WITH MAJOR PROBLEM DIAGNOSIS	1.2896	0.2054	0.2054	0.2866	1.2896	0.2054	0.2054	0.2866	1.2896	0.2054	0.2054	0.2866
645	NEONATES WEIGHT >2500 GM WITH MODERATE PROBLEM DIAGNOSIS	0.6003	0.1219	0.1219	0.1936	0.6003	0.1219	0.1219	0.1936	0.6003	0.1219	0.1219	0.1936
646	NEONATES WEIGHT >2500 GM WITH CAESARIAN DELIVERY	0.2999	0.0513	0.0513	0.1331	0.2999	0.0513	0.0513	0.1331	0.2999	0.0513	0.0513	0.1331
647	NEONATES WEIGHT >2500 GM WITH MINOR PROBLEM DIAGNOSIS	0.3135	0.0832	0.0832	0.1425	0.3135	0.0832	0.0832	0.1425	0.3135	0.0832	0.0832	0.1425
648	NEONATES WEIGHT >2500 GM (NORMAL NEWBORN)	0.1915	0.0486	0.0486	0.1331	0.1915	0.0486	0.0486	0.1331	0.1915	0.0486	0.0486	0.1331
650	TRACHEOSTOMY AND GASTROSTOMY PROCEDURES FOR TRAUMA	18.8155	0.2791	0.3377	0.4202	17.6331	0.2900	0.3522	0.4202	17.4746	0.2025	0.2362	0.4202
651	INTRACRANIAL PROCEDURES WITH SPINAL PROCEDURES FOR TRAUMA	5.4478	0.1741	0.1784	0.3205	5.4478	0.1741	0.1784	0.3205	5.4478	0.1741	0.1784	0.3205
652	INTRACRANIAL PROCEDURES WITH FEMUR PROCEDURES FOR TRAUMA	10.8954	0.2640	0.2640	0.4191	10.8954	0.2640	0.2640	0.4191	10.8954	0.2640	0.2640	0.4191
653	INTRACRANIAL OR FEMUR PROCEDURES WITH THORACO-ABDOMINAL PROCEDURES FOR TRAUMA	12.6799	0.2584	0.2821	0.5060	12.6799	0.2584	0.2821	0.5060	12.6799	0.2584	0.2821	0.5060
654	INTRACRANIAL PROCEDURES W WOUND DEBRIDEMENT OR LOWER EXTREMITY PROC FOR	12.0026	0.1646	0.2221	0.4365	12.0026	0.1646	0.2221	0.4365	12.0026	0.1646	0.2221	0.4365
655	SPINAL PROCEDURES WITH FEMUR PROCEDURES FOR TRAUMA	9.3877	0.3005	0.3833	0.4238	9.7156	0.3005	0.3833	0.4238	8.4758	0.3005	0.3833	0.4238
656	SPINAL PROCEDURES WITH THORACO-ABDOMINAL PROCEDURES FOR TRAUMA	10.7933	0.2427	0.2574	0.4633	10.7933	0.2427	0.2574	0.4633	10.7933	0.2427	0.2574	0.4633
657	SPINAL PROCEDURES WITH WOUND DEBRIDEMENT OR LOWER EXTREMITY PROC FOR TRAUMA	3.9365	0.2621	0.2800	0.3336	3.9365	0.2621	0.2800	0.3336	3.9365	0.2621	0.2800	0.3336
658	FEMUR PROCEDURES WITH WOUND DEBRIDEMENT OR LOWER EXTREMITY PROC FOR TRAUMA	4.5418	0.2329	0.2636	0.3448	5.5455	0.2167	0.2437	0.3448	5.3893	0.1758	0.1758	0.3448
659	THORACO-ABDOMINAL PROC W WOUND DEBRIDEMENT OR LOWER EXTREMITY PROC FOR TRAUMA	4.7052	0.2316	0.2501	0.3121	4.7052	0.2316	0.2501	0.3121	4.7052	0.2316	0.2501	0.3121
660	INTRACRANIAL PROCEDURES FOR TRAUMA	2.3962	0.2439	0.2685	0.2243	2.5780	0.2273	0.2491	0.2243	2.5486	0.1500	0.1586	0.2243
661	SPINAL PROCEDURES FOR TRAUMA	2.9626	0.2509	0.2691	0.3011	3.0145	0.2519	0.2702	0.3011	3.0575	0.2110	0.2245	0.3011
662	FEMUR OR PELVIC PROCEDURES FOR TRAUMA	1.3149	0.1601	0.1810	0.2360	1.7470	0.1447	0.1605	0.2360	2.2224	0.1229	0.1312	0.2360
663	THORACO-ABDOMINAL PROCEDURES FOR TRAUMA	2.6945	0.2750	0.2842	0.3397	2.6979	0.2700	0.2790	0.3397	2.7077	0.2551	0.2633	0.3397
664	WOUND DEBRIDEMENT AND SKIN GRAFT FOR TRAUMA	1.8695	0.2983	0.3097	0.2935	2.0001	0.2286	0.2360	0.2935	2.0000	0.1770	0.1815	0.2935
665	ELEVATED SKULL FRACTURES	1.1949	0.2826	0.2912	0.3229	1.1949	0.2826	0.2912	0.3229	1.1949	0.2826	0.2912	0.3229
666	MAJOR LOWER EXTREMITY PROCEDURES FOR TRAUMA	0.7769	0.2308	0.2481	0.3205	0.8909	0.1732	0.1829	0.3205	1.3995	0.1303	0.1345	0.3205
667	MINOR LOWER EXTREMITY PROCEDURES FOR TRAUMA	0.8504	0.1969	0.1994	0.3527	0.8869	0.1850	0.1872	0.3527	0.8800	0.1808	0.1829	0.3527
668	MISCELLANEOUS MUSCULOSKELETAL PROCEDURES FOR TRAUMA	1.2992	0.2523	0.2602	0.5060	1.2992	0.2523	0.2602	0.5060	1.2992	0.2523	0.2602	0.5060
669	VASCULAR REPAIR FOR TRAUMA	0.8675	0.3523	0.3523	0.5060	0.8675	0.3523	0.3523	0.5060	0.8675	0.3523	0.3523	0.5060
670	UPPER EXTREMITY PROCEDURES FOR TRAUMA	0.7082	0.2851	0.2992	0.4624	0.8863	0.2071	0.2151	0.4624	1.0271	0.1215	0.1232	0.4624
674	INTRACRANIAL INJURIES WITH SPINAL INJURIES	2.2627	0.2059	0.2310	0.2560	2.2114	0.2059	0.2310	0.2560	2.4515	0.2059	0.2310	0.2560
675	INTRACRANIAL INJURIES WITH FRACTURES OF FEMUR OR PELVIS	4.4413	0.2386	0.2794	0.4112	4.4413	0.2386	0.2794	0.4112	4.4413	0.2386	0.2794	0.4112
676	INTRACRANIAL INJURIES WITH THORACO-ABDOMINAL INJURIES	2.5598	0.1822	0.1924	0.3226	2.5723	0.1822	0.1924	0.3226	2.7681	0.1822	0.1924	0.3226
677	SPINAL INJURIES WITH FRACTURES OF FEMUR	1.9865	0.0989	0.0989	0.1850	1.5928	0.0989	0.0989	0.1850	2.2907	0.0989	0.0989	0.1850
678	SPINAL INJURIES WITH THORACO-ABDOMINAL INJURIES	1.9851	0.1760	0.1814	0.2537	1.9752	0.1810	0.1868	0.2537	1.9790	0.1297	0.1318	0.2537
679	FRACTURES OF FEMUR WITH THORACO-ABDOMINAL INJURIES	2.5486	0.1395	0.1454	0.2861	2.2136	0.1395	0.1454	0.2861	2.9521	0.1395	0.1454	0.2861
680	FEMUR OR PELVIC FRACTURES AND DISLOCATIONS	0.8362	0.1066	0.1091	0.1569	1.2827	0.0980	0.0980	0.1569	1.3235	0.0859	0.0859	0.1569
681	FROSTBITE	4.3587	0.1043	0.1058	0.5060	4.3587	0.1043	0.1058	0.5060	4.3587	0.1043	0.1058	0.5060
682	SPINAL INJURIES	0.5717	0.1251	0.1298	0.1448	0.7504	0.1181	0.1216	0.1448	1.1287	0.0904	0.0904	0.1448
683	INTRACRANIAL INJURIES	0.8360	0.1962	0.2276	0.1988	0.8842	0.1523	0.1696	0.1988	1.3512	0.1218	0.1292	0.1988
684	FRACTURE OF HUMERUS	0.5241	0.1210	0.1339	0.1555	0.5750	0.1114	0.1187	0.1555	0.9366	0.0941	0.0941	0.1555
685	HIP AND THIGH INJURIES	0.4049	0.0851	0.0851	0.1331	0.4190	0.0851	0.0851	0.1331	0.6673	0.0851	0.0851	0.1331
686	MAJOR NERVE INJURIES	0.3983	0.2190	0.2311	0.2489	0.3983	0.2190	0.2311	0.2489	0.3983	0.2190	0.2311	0.2489
687	THORACO-ABDOMINAL INJURIES	0.9832	0.1754	0.1846	0.2116	0.8522	0.1481	0.1540	0.2116	1.3114	0.1047	0.1053	0.2116

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
688	WEIGHT BEARING INJURIES	0.3402	0.1380	0.1522	0.1705	0.4615	0.0994	0.0995	0.1705	0.8819	0.0927	0.0927	0.1705
689	GENITO-URINARY INJURIES	0.9033	0.1343	0.1346	0.2823	0.9033	0.1343	0.1346	0.2823	0.9033	0.1343	0.1346	0.2823
690	CRUSHING INJURIES AND CONTUSIONS	0.4534	0.1312	0.1393	0.2052	0.4124	0.1364	0.1457	0.2052	0.7047	0.1010	0.1015	0.2052
691	MINOR LOWER EXTREMITY FRACTURES	0.3997	0.1289	0.1326	0.1333	0.3997	0.1289	0.1326	0.1333	0.3997	0.1289	0.1326	0.1333
692	WOUNDS	0.3947	0.1823	0.1932	0.2769	0.5059	0.1969	0.2096	0.2769	0.5029	0.1347	0.1393	0.2769
693	AMPUTATIONS OR VASCULAR AND OTHER NERVE INJURIES	0.5428	0.2527	0.2600	0.3542	0.5209	0.2534	0.2607	0.3542	0.5325	0.2451	0.2520	0.3542
694	FACIAL INJURIES	0.5294	0.2566	0.2695	0.2931	0.4925	0.2116	0.2208	0.2931	0.4924	0.1918	0.1994	0.2931
695	OTHER CRANIAL INJURIES	0.4651	0.1506	0.1593	0.3020	0.5248	0.1739	0.1864	0.3020	0.7168	0.0939	0.0939	0.3020
696	UPPER EXTREMITY FRACTURES	0.3235	0.1613	0.1764	0.2690	0.4079	0.1420	0.1524	0.2690	0.7497	0.0916	0.0916	0.2690
700	BONE MARROW TRANSPLANT	5.0924	0.2339	0.2339	0.2674	6.4396	0.2414	0.2414	0.2674	6.4307	0.2486	0.2486	0.2674
701	SPLENECTOMY	1.1727	0.2897	0.2935	0.2796	1.2048	0.2715	0.2749	0.2796	1.2441	0.2191	0.2214	0.2796
703	OTHER O.R. PROCEDURES OF BLOOD AND BLOOD-FORMING ORGANS	1.6100	0.2031	0.2047	0.3191	1.7206	0.1983	0.1998	0.3191	1.7216	0.1852	0.1864	0.3191
704	RED BLOOD CELL DISORDERS	0.6631	0.1447	0.1493	0.1836	0.7441	0.1260	0.1287	0.1836	0.8583	0.1019	0.1022	0.1836
709	COAGULATION DISORDERS	0.5315	0.1252	0.1270	0.2110	0.6832	0.1324	0.1347	0.2110	0.8874	0.1075	0.1080	0.2110
710	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS	0.7613	0.1748	0.1763	0.1864	0.7730	0.1242	0.1247	0.1864	0.8608	0.1060	0.1061	0.1864
725	MAJOR LEUKEMIA AND LYMPHOMA PROCEDURES	1.7989	0.2633	0.2706	0.2918	1.4172	0.2065	0.2113	0.2918	1.4934	0.1669	0.1699	0.2918
726	ACUTE LEUKEMIA WITHOUT MAJOR PROCEDURES	2.8474	0.2792	0.2813	0.2255	4.2934	0.2169	0.2183	0.2255	3.2077	0.2035	0.2047	0.2255
728	LYMPHOMA AND CHRONIC LEUKEMIA WITH OTHER PROCEDURES	1.5270	0.2034	0.2098	0.1615	1.4658	0.1785	0.1833	0.1615	1.8861	0.1487	0.1518	0.1615
730	LYMPHOMA AND CHRONIC LEUKEMIA	2.0352	0.2218	0.2314	0.2054	1.3381	0.1557	0.1602	0.2054	1.4598	0.1197	0.1214	0.2054
733	MAJOR ILL-DEFINED NEOPLASM PROCEDURES	1.7955	0.2163	0.2181	0.2896	1.7955	0.2163	0.2181	0.2896	1.7955	0.2163	0.2181	0.2896
734	ILL-DEFINED NEOPLASM WITH OTHER PROCEDURES	1.1481	0.1790	0.1853	0.2941	1.2047	0.1715	0.1772	0.2941	0.9541	0.1556	0.1601	0.2941
735	RADIATION THERAPY	0.4861	0.1711	0.1726	0.1592	0.3962	0.1336	0.1344	0.1592	0.6204	0.1033	0.1034	0.1592
736	CHEMOTHERAPY	1.3103	0.1918	0.2270	0.4518	1.3103	0.1918	0.2270	0.4518	1.3103	0.1918	0.2270	0.4518
737	OTHER POORLY DIFFERENTIATED NEOPLASTIC DIAGNOSES	1.3827	0.1412	0.1475	0.1819	1.3831	0.1352	0.1405	0.1819	1.6568	0.1312	0.1361	0.1819
750	MULTISYSTEMIC OR UNSPECIFIED SITE INFECTIONS WITH SURGERY	2.3174	0.2282	0.2388	0.2420	2.7357	0.1869	0.1941	0.2420	3.6996	0.1635	0.1688	0.2420
751	SEPTICEMIA	1.0626	0.1690	0.1775	0.2212	1.4485	0.1491	0.1551	0.2212	1.5917	0.1176	0.1198	0.2212
756	POST-OPERATIVE AND POST-TRAUMATIC INFECTIONS	1.0144	0.1429	0.1446	0.1797	1.6887	0.1243	0.1252	0.1797	0.9597	0.1266	0.1214	0.1797
757	VIRAL ILLNESS	0.4556	0.1193	0.1204	0.1957	0.5993	0.1398	0.1419	0.1957	0.5967	0.1024	0.1026	0.1957
761	FEVER OF UNKNOWN ORIGIN	0.5952	0.1346	0.1362	0.2350	0.6620	0.1305	0.1318	0.2350	0.8652	0.1053	0.1057	0.2350
763	OTHER INFECTIOUS DIAGNOSES	0.6582	0.1622	0.1657	0.1787	1.0054	0.1441	0.1466	0.1787	0.9635	0.0987	0.0987	0.1787
764	DEPRESSIVE MOOD DISORDERS WITH ECT	3.9903	0.0718	0.0718	0.1331	3.9903	0.0718	0.0718	0.1331	3.9903	0.0718	0.0718	0.1331
765	DEPRESSIVE MOOD DISORDERS WITHOUT ECT WITH AXIS III DIAGNOSIS	2.8547	0.1122	0.1142	0.1331	1.8992	0.0761	0.0761	0.1331	2.9022	0.0943	0.0943	0.1331
766	DEPRESSIVE MOOD DISORDERS WITHOUT ECT WITHOUT AXIS III DIAGNOSIS	1.3961	0.1190	0.1253	0.1331	1.2637	0.0617	0.0617	0.1331	1.4465	0.0758	0.0758	0.1331
767	DEPRESSIVE MOOD DISORDERS LOS <6 DAYS	0.3969	0.0993	0.0993	0.1469	0.3969	0.0993	0.0993	0.1469	0.3969	0.0993	0.0993	0.1469
768	BIPOLAR MOOD DISORDERS, MANIC WITH ECT	4.3744	0.0861	0.0861	0.1331	4.3744	0.0861	0.0861	0.1331	4.3744	0.0861	0.0861	0.1331
769	BIPOLAR MOOD DISORDERS, MANIC WITHOUT ECT WITH AXIS III DIAGNOSIS	2.9611	0.0968	0.0968	0.1430	2.9611	0.0968	0.0968	0.1430	2.9611	0.0968	0.0968	0.1430
770	BIPOLAR MOOD DISORDERS, MANIC WITHOUT ECT WITHOUT AXIS III DIAGNOSIS	1.9643	0.1324	0.1592	0.1331	1.9930	0.0815	0.0815	0.1331	1.9892	0.0784	0.0784	0.1331
771	BIPOLAR MOOD DISORDERS LOS <6 DAYS	0.4893	0.1322	0.1322	0.1813	0.4893	0.1322	0.1322	0.1813	0.4893	0.1322	0.1322	0.1813
772	DEMENTIA WITH OR WITHOUT DELIRIUM WITH AXIS III DIAGNOSIS	2.8790	0.0896	0.0896	0.2399	2.8790	0.0896	0.0896	0.2399	2.8790	0.0896	0.0896	0.2399
773	DEMENTIA WITH OR WITHOUT DELIRIUM WITHOUT AXIS III DIAGNOSIS	1.5626	0.0857	0.0857	0.1815	1.5744	0.0857	0.0857	0.1815	1.3596	0.0996	0.1014	0.1815
774	ORGANIC MENTAL DISORDERS INDUCED BY DRUGS	0.9016	0.0910	0.0910	0.1670	0.9016	0.0910	0.0910	0.1670	0.9016	0.0910	0.0910	0.1670
775	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS WITH ECT	5.0545	0.0826	0.0826	0.1331	5.0545	0.0723	0.0723	0.1331	5.0087	0.0789	0.0789	0.1331
776	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS W/O ECT WITH AXIS III DIAGNOSIS	2.1723	0.0836	0.0836	0.1331	2.6032	0.0841	0.0841	0.1331	1.9126	0.0651	0.0651	0.1331
777	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS W/O ECT OR AXIS III DIAGNOSIS	1.6517	0.0989	0.0989	0.1331	1.9349	0.0771	0.0771	0.1331	1.7575	0.0824	0.0824	0.1331
778	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS LOS <6 DAYS	0.5049	0.1324	0.1325	0.1870	0.5049	0.1324	0.1325	0.1870	0.5049	0.1324	0.1325	0.1870
779	DISSOCIATIVE DISORDERS	0.9533	0.1115	0.1130	0.1740	0.7878	0.0928	0.0928	0.1740	0.7878	0.0928	0.0928	0.1740
780	ALCOHOL INDUCED ORGANIC MENTAL DISORDERS WITH AXIS III DIAGNOSIS	1.2449	0.1053	0.1091	0.2138	1.2449	0.1053	0.1091	0.2138	1.2448	0.0910	0.0910	0.2138
781	ALCOHOL INDUCED ORGANIC MENTAL DISORDERS WITHOUT AXIS III DIAGNOSIS	0.6487	0.0998	0.1005	0.2019	0.6487	0.0998	0.1005	0.2019	0.6381	0.0925	0.0925	0.2019
783	PSYCHOACTIVE SUBSTANCE DEPENDENCE	0.6239	0.0842	0.0842	0.1523	0.5845	0.0814	0.0814	0.1523	0.5877	0.0980	0.0980	0.1523
784	PSYCHOACTIVE SUBSTANCE ABUSE	0.3975	0.1147	0.1222	0.2320	0.4590	0.0903	0.0903	0.2320	0.4610	0.0870	0.0870	0.2320
785	DEVELOPMENTAL DELAY	2.1477	0.1216	0.1780	0.2726	2.3580	0.1216	0.1780	0.2726	1.9718	0.1216	0.1780	0.2726
786	DISRUPTIVE BEHAVIOUR DISORDERS	1.3577	0.1572	0.1708	0.2896	1.3326	0.1572	0.1708	0.2896	1.4260	0.1572	0.1708	0.2896
787	EATING DISORDERS	3.0322	0.1438	0.1441	0.1483	3.9412	0.1026	0.1026	0.1483	3.9412	0.1026	0.1026	0.1483
788	ORGANIC MENTAL DISORDERS ASSOCIATED W PHYSICAL DISORDERS W AXIS III DIAGNOSIS	1.5658	0.1035	0.1145	0.1616	1.5658	0.1038	0.1153	0.1616	1.8426	0.0875	0.0875	0.1616
789	ORGANIC MENTAL DISORDERS ASSOCIATED W PHYSICAL DISORDERS W/O AXIS III DIAGNOSIS	1.6891	0.1023	0.1118	0.1761	1.5202	0.1021	0.1112	0.1761	1.2001	0.0896	0.0896	0.1761
790	SOMATOFORM DISORDERS	0.5809	0.0993	0.0995	0.1331	0.4579	0.0849	0.0849	0.1331	0.4514	0.0844	0.0844	0.1331
791	ANXIETY DISORDERS (MNRH)	0.8278	0.1098	0.1136	0.1740	0.7856	0.0811	0.0811	0.1740	0.7668	0.0835	0.0835	0.1740
792	ADJUSTMENT DISORDERS (MNRH)	0.6940	0.1220	0.1297	0.1560	0.5167	0.0827	0.0827	0.1560	0.5179	0.0863	0.0863	0.1560
793	PERSONALITY DISORDERS WITH AXIS III DIAGNOSIS (MNRH)	0.9057	0.1050	0.1078	0.1561	0.9057	0.1050	0.1078	0.1561	0.9057	0.1050	0.1078	0.1561
794	PERSONALITY DISORDERS WITHOUT AXIS III DIAGNOSIS (MNRH)	0.5301	0.0849	0.0849	0.1680	0.5974	0.0845	0.0845	0.1680	0.5974	0.0845	0.0845	0.1680

Appendix A - PAC-10 Values

CMG	CMG Title	Age 0 - 17				Age 18 - 69				Age 70 +			
		PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW	PAC-10	Blended Out. PDW	RAPDW	CIHI PDW
795	SEXUAL DYSFUNCTION AND SEXUAL DISORDERS (MNRH)	0.7685	0.1253	0.1708	0.1331	0.7685	0.1253	0.1708	0.1331	0.7685	0.1253	0.1708	0.1331
796	SPECIFIC DEVELOPMENTAL DISORDERS (MNRH)	4.1889	0.0784	0.0784	0.3088	4.1889	0.0784	0.0784	0.3088	4.1889	0.0784	0.0784	0.3088
797	MISCELLANEOUS PSYCHIATRIC DIAGNOSES (MNRH)	0.9353	0.0921	0.0921	0.1750	0.6020	0.0921	0.0921	0.1750	0.7875	0.0921	0.0921	0.1750
803	EXTENSIVE PROCEDURES FOR INJURY OR COMPLICATION OF TREATMENT	1.6946	0.2200	0.2297	0.2583	2.3927	0.2118	0.2209	0.2583	1.8034	0.1957	0.2036	0.2583
804	NON-EXTENSIVE PROCEDURES FOR INJURY OR COMPLICATION OF TREATMENT	0.8473	0.2265	0.2321	0.3219	1.2783	0.2028	0.2074	0.3219	1.0950	0.1722	0.1754	0.3219
805	MNRH PROCEDURES FOR INJURY OR COMPLICATION OF TREATMENT	0.5429	0.1956	0.2003	0.2688	0.5660	0.1826	0.1867	0.2688	0.6221	0.1726	0.1762	0.2688
811	ALLERGIC REACTION	0.3405	0.1460	0.1468	0.3182	0.4754	0.1637	0.1647	0.3182	0.4736	0.1678	0.1689	0.3182
813	DRUG REACTIONS	0.4996	0.1449	0.1477	0.3105	0.6041	0.1782	0.1831	0.3105	0.7484	0.1072	0.1078	0.3105
818	COMPLICATIONS OF TREATMENT	0.6421	0.1997	0.2053	0.2612	0.8598	0.1606	0.1640	0.2612	0.8338	0.1336	0.1355	0.2612
823	MINOR INJURIES AND TRAUMA DIAGNOSIS	0.5697	0.1864	0.2255	0.2708	0.3911	0.1782	0.2136	0.2708	0.7598	0.1010	0.1019	0.2708
830	EXTENSIVE BURNS WITH SKIN GRAFT WOUND DEBRIDEMENT OR OTHER BURN PROCEDURES	10.7344	0.2848	0.2848	0.3773	10.7344	0.2848	0.2848	0.3773	10.7344	0.2848	0.2848	0.3773
831	EXTENSIVE BURNS WITHOUT BURN PROCEDURES	3.6619	0.3107	0.3107	0.4020	3.6619	0.3107	0.3107	0.4020	3.6619	0.3107	0.3107	0.4020
832	NON-EXTENSIVE BURNS WITH SKIN GRAFT	2.0206	0.1963	0.1973	0.1850	2.3320	0.1735	0.1743	0.1850	2.3319	0.1738	0.1738	0.1850
833	NON-EXTENSIVE BURNS WITH WOUND DEBRIDEMENT OR OTHER BURN PROCEDURES	1.3528	0.1325	0.1325	0.1331	1.3528	0.1325	0.1325	0.1331	1.3528	0.1325	0.1325	0.1331
834	NON-EXTENSIVE BURNS WITHOUT BURN PROCEDURES	0.8820	0.1413	0.1420	0.2151	0.8820	0.1413	0.1420	0.2151	0.8820	0.1413	0.1420	0.2151
840	OTHER ADMISSIONS WITH SURGERY	1.0501	0.2479	0.2955	0.3448	1.2868	0.2223	0.2617	0.3448	2.9902	0.1114	0.1153	0.3448
841	REHABILITATION	3.0414	0.0977	0.0977	0.1593	2.5799	0.0977	0.0977	0.1593	3.7000	0.0977	0.0977	0.1593
842	SIGNS AND SYMPTOMS	0.5856	0.1226	0.1393	0.1597	0.7251	0.1063	0.1116	0.1597	0.9093	0.0830	0.0830	0.1597
846	AFTERCARE FOLLOWING SURGERY OR TREATMENT	0.3112	0.1472	0.1612	0.2216	0.2707	0.1435	0.1565	0.2216	0.2727	0.1556	0.1721	0.2216
847	OTHER SPECIFIED AFTERCARE	1.7232	0.1016	0.1021	0.1834	1.7232	0.1001	0.1003	0.1834	1.5447	0.0887	0.0887	0.1834
849	MULTIPLE OR UNSPECIFIED CONGENITAL ANOMALIES	1.4487	0.1355	0.1355	0.5060	1.4487	0.1355	0.1355	0.5060	1.4487	0.1355	0.1355	0.5060
850	PERINATAL CONDITIONS AGE >28 DAYS	0.9718	0.1054	0.1054	0.1331	0.9718	0.1054	0.1054	0.1331	0.9718	0.1054	0.1054	0.1331
851	OTHER FACTORS CAUSING HOSPITALIZATION	0.3679	0.1056	0.1125	0.1331	0.4195	0.1062	0.1139	0.1331	0.8343	0.0774	0.0774	0.1331
852	PROCEDURES CANCELLED (MNRH)	0.1317	0.0934	0.0934	0.1331	0.1317	0.0934	0.0934	0.1331	0.1317	0.0934	0.0934	0.1331
860	RESPIRATORY TRACT DISORDERS WITH HIV	1.3680	0.1395	0.1427	0.1610	1.3680	0.1395	0.1427	0.1610	1.3680	0.1380	0.1410	0.1610
861	CNS INFECTION WITH HIV	3.0269	0.1410	0.1437	0.1469	3.0269	0.1410	0.1437	0.1469	3.0269	0.1410	0.1437	0.1469
862	GI AND HEPATOBIILIARY DISORDERS WITH HIV	1.0528	0.1107	0.1142	0.1443	1.0528	0.1107	0.1142	0.1443	1.0528	0.1107	0.1142	0.1443
863	OPHTHALMIC DISORDERS WITH HIV	2.9477	0.1633	0.1633	0.2216	2.9477	0.1633	0.1633	0.2216	2.9477	0.1633	0.1633	0.2216
864	BLOOD INFECTIONS WITH HIV	1.3702	0.1501	0.1501	0.1692	1.3702	0.1501	0.1501	0.1692	1.3702	0.1501	0.1501	0.1692
865	LYMPHOMA WITH HIV	2.4979	0.1549	0.1549	0.1999	2.4979	0.1549	0.1549	0.1999	2.4979	0.1549	0.1549	0.1999
866	PSYCHOSOCIAL CONDITIONS WITH HIV	1.5584	0.0980	0.0980	0.2514	1.5584	0.0980	0.0980	0.2514	1.5584	0.0980	0.0980	0.2514
867	OTHER CONDITIONS ASSOCIATED WITH HIV	1.2639	0.1244	0.1244	0.2689	1.2639	0.1244	0.1244	0.2689	1.2639	0.1244	0.1244	0.2689
868	MISCELLANEOUS CONDITIONS WITH HIV	1.1115	0.1445	0.1521	0.1463	1.1115	0.1445	0.1521	0.1463	1.1115	0.1445	0.1521	0.1463
880	AMPUTATION OF LOWER LIMB EXCEPT TOE WITH MAJOR VASCULAR SURGERY	5.3303	0.1554	0.1711	0.2043	5.3303	0.1554	0.1711	0.2043	5.3303	0.1554	0.1711	0.2043
881	AMPUTATION OF LOWER LIMB EXCEPT TOE	3.2299	0.1390	0.1484	0.2243	3.2299	0.1390	0.1484	0.2243	3.2299	0.1390	0.1484	0.2243
882	WOUND DEBRIDEMENT OR OTHER AMPUTATION WITH MAJOR VASCULAR SURGERY	4.0423	0.1716	0.1768	0.3062	4.0423	0.1716	0.1768	0.3062	4.0423	0.1716	0.1768	0.3062
883	WOUND DEBRIDEMENT AND GRAFTING OTHER THAN HAND	2.0196	0.1260	0.1390	0.2706	2.0196	0.1260	0.1390	0.2706	2.0980	0.1125	0.1190	0.2706
884	OTHER AMPUTATIONS INCLUDING TOE	1.6542	0.1348	0.1393	0.1726	1.6542	0.1348	0.1393	0.1726	1.8803	0.1153	0.1173	0.1726
885	AORTIC REPLACEMENT	2.8923	0.2992	0.3059	0.4240	3.2763	0.2605	0.2658	0.4240	3.7164	0.2379	0.2425	0.4240
887	VASCULAR BYPASS SURGERY	2.0550	0.2233	0.2284	0.3116	2.0550	0.2233	0.2284	0.3116	2.6250	0.2080	0.2123	0.3116
890	OTHER THORACO-ABDOMINAL PROCEDURES	3.2569	0.2593	0.2664	0.4343	3.2569	0.2561	0.2629	0.4343	3.6224	0.2608	0.2679	0.4343
891	VASCULAR REPAIR	1.7273	0.2423	0.2532	0.4225	1.6856	0.2243	0.2339	0.4225	2.2737	0.2247	0.2342	0.4225
892	OTHER VASCULAR PROCEDURES	1.4485	0.2525	0.2575	0.5060	1.4485	0.2525	0.2575	0.5060	1.4485	0.2525	0.2575	0.5060
893	VEIN LIGATION AND STRIPPING (MNRH)	0.4727	0.2667	0.2673	0.3939	0.4727	0.2667	0.2673	0.3939	0.4727	0.2667	0.2673	0.3939
895	DEEP VEIN THROMBOPHLEBITIS	0.9862	0.1097	0.1109	0.1841	1.0462	0.1087	0.1098	0.1841	1.4187	0.0943	0.0943	0.1841
898	PERIPHERAL VASCULAR DISEASE	0.7911	0.1752	0.1828	0.2246	0.9093	0.1574	0.1632	0.2246	1.0621	0.1325	0.1358	0.2246
900	EXTENSIVE UNRELATED O.R. PROCEDURES	3.3990	0.2218	0.2412	0.2547	2.9560	0.2018	0.2181	0.2547	4.1808	0.1449	0.1522	0.2547
901	NON-EXTENSIVE UNRELATED O.R. PROCEDURES	2.0334	0.2105	0.2273	0.2746	2.6768	0.1711	0.1818	0.2746	3.5885	0.1316	0.1365	0.2746
902	POST-OPERATIVE COMPLICATIONS WITH UNRELATED O.R. PROCEDURES	1.1133	0.2394	0.2504	0.2829	1.5196	0.2565	0.2689	0.2829	2.3481	0.1466	0.1503	0.2829
906	UNRELATED O.R. PROCEDURES (MNRH)	1.1552	0.1874	0.2059	0.3012	1.7387	0.1606	0.1735	0.3012	2.3748	0.0984	0.0984	0.3012
908	OTHER MAJOR PROCEDURES FOR GYNECOLOGICAL MALIGNANCY	1.4350	0.1822	0.1822	0.3587	1.4350	0.1822	0.1822	0.3587	1.4350	0.1822	0.1822	0.3587
909	OBSOLETE PSYCHIATRIC DIAGNOSES (MNRH)	0.9966	0.1339	0.1445	0.1403	0.7628	0.0842	0.0842	0.1403	0.7717	0.0907	0.0907	0.1403
910	DIAGNOSIS NOT GENERALLY HOSPITALIZED	0.2486	0.0989	0.0989	0.0989	0.2486	0.0989	0.0989	0.0989	0.2486	0.0989	0.0989	0.0989
912	OBSTETRIC CODES INVALID AS MOST RESPONSIBLE DIAGNOSIS	0.2946	0.0989	0.0989	0.0989	0.2946	0.0989	0.0989	0.0989	0.2946	0.0989	0.0989	0.0989
996	CADAVERIC DONOR ORGAN AND TISSUE RETRIEVAL	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
997	STILLBIRTHS	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
998	NEONATE WITH CATASTROPHIC DIAGNOSIS LOS <6 DAYS	0.2658	0.0989	0.0989	0.0989	0.2658	0.0989	0.0989	0.0989	0.2658	0.0989	0.0989	0.0989
999	UNGROUPABLE DATA	0.6490	0.0989	0.0989	0.0989	0.6490	0.0989	0.0989	0.0989	0.6490	0.0989	0.0989	0.0989

Appendix B - 2002/2003 ELOS and Trim Points

CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
001	CRANIOTOMY PROCEDURES	24	7.2	24	6.8	30	8.4
003	SPINAL PROCEDURES	19	7.3	15	4.7	50	14.2
004	EXTRACRANIAL VASCULAR PROCEDURES	7	2.2	7	2.2	7	2.2
005	VENTRICULAR SHUNT REVISION	5	2.4	12	3.5	13	3.6
006	CARPAL TUNNEL RELEASE AND SPECIFIED NERVOUS SYSTEM	3	1.4	3	1.4	3	1.4
007	PERIPHERAL, CRANIAL NERVE AND OTHER NEUROLOGICAL	23	6.2	46	11.2	82	23.8
010	NEOPLASM OF NERVOUS SYSTEM	14	3.8	24	7.0	28	8.9
011	DEGENERATIVE NERVOUS DISORDERS	10	2.6	29	7.7	32	9.9
012	MULTIPLE SCLEROSIS AND CEREBELLAR DISORDERS	9	2.3	22	6.9	31	7.9
013	SPECIFIC CEREBROVASCULAR DISORDERS EXCEPT TRANSIENT	18	4.1	22	6.6	27	8.6
014	TRANSIENT ISCHEMIC ATTACKS AND PRECEREBRAL OCCLUSIONS	12	3.4	12	3.4	13	4.1
015	NONSPECIFIC CEREBROVASCULAR DISORDERS	19	5.5	19	5.6	25	7.6
017	CRANIAL AND PERIPHERAL NERVE DISEASES	6	1.9	21	5.3	30	8.0
018	VIRAL MENINGITIS	7	2.7	11	3.7	13	3.6
019	INFECTION EXCEPT VIRAL MENINGITIS	24	6.9	27	8.1	43	12.8
020	HYPERTENSIVE ENCEPHALOPATHY	15	5.6	15	5.6	15	5.6
021	NON-TRAUMATIC STUPOR AND COMA	3	1.1	12	3.2	14	4.4
022	SEIZURE AND HEADACHE	7	1.9	9	2.7	15	4.4
028	OTHER NERVOUS SYSTEM DIAGNOSES	9	2.3	19	5.1	26	7.2
040	TRACHEOSTOMY AND GASTROSTOMY PROCEDURES	102	24.2	109	32.1	100	32.0
050	ORBITAL PROCEDURES	10	3.1	3	1.5	7	2.0
051	OTHER INTRAOCULAR PROCEDURES	3	1.4	3	1.4	3	1.4
052	RETINAL PROCEDURES	3	1.3	3	1.3	3	1.3
053	IRIS AND LENS PROCEDURES	3	1.4	3	1.4	3	1.4
054	EXTRAOCULAR PROCEDURES	7	1.6	7	1.6	7	1.6
055	LENS INSERTION (MNRH)	3	1.2	3	1.2	3	1.2
057	OTHER OPHTHALMIC PROCEDURES (MNRH)	3	1.2	3	1.2	3	1.2
060	MAJOR EYE INFECTIONS	8	2.8	9	3.6	13	4.6
062	HYPHEMA	11	3.0	11	3.0	11	3.0
063	OTHER OPHTHALMIC DIAGNOSES (MNRH)	7	2.2	9	2.8	18	5.0
075	RADICAL LARYNGECTOMY AND GLOSSECTOMY	53	18.7	53	18.7	53	18.7
076	MAJOR HEAD AND NECK PROCEDURES	8	2.2	24	5.9	32	8.4
077	LESS EXTENSIVE HEAD AND NECK PROCEDURES	5	1.6	5	1.4	11	2.8
078	CLEFT LIP AND PALATE REPAIR	4	1.8	4	1.8	4	1.8
081	SALIVARY GLAND PROCEDURES	7	2.3	3	1.4	3	1.5
082	MINOR EAR, NOSE AND THROAT PROCEDURES	5	1.4	5	1.4	5	1.4
083	RECONSTRUCTIVE ENT PROCEDURES	4	1.7	4	1.7	4	1.7
084	MISCELLANEOUS EAR, NOSE AND THROAT PROCEDURES	3	1.3	9	2.6	9	2.7
085	MASTOID PROCEDURES	3	1.1	3	1.1	3	1.1
086	OTHER TONSILLAR PROCEDURES	7	1.9	7	2.1	7	2.2
087	SINUS PROCEDURES	4	1.2	4	1.2	4	1.2
088	ETHMOIDECTOMY (MNRH)	3	1.1	3	1.1	3	1.1
089	DENTAL EXTRACTION OR RESTORATION (MNRH)	3	1.4	3	1.4	3	1.4
090	EXTERNAL AND MIDDLE EAR PROCEDURES (MNRH)	3	1.1	3	1.1	3	1.1
091	NASAL PROCEDURES (MNRH)	3	1.1	3	1.1	3	1.1
092	MYRINGOTOMY (MNRH)	8	2.4	8	2.4	8	2.4
093	TONSILLECTOMY AND ADENOIDECTOMY PROCEDURES (MNRH)	4	1.1	4	1.1	4	1.1
100	ENT MALIGNANCY	20	4.3	20	4.3	28	7.3
101	ACUTE SUPPURATIVE INFECTIONS	8	2.9	8	3.0	14	4.8
102	DYSEQUILIBRIUM	9	2.6	9	2.6	10	3.3
104	INFLUENZA	7	2.0	7	2.3	13	4.3
107	EPIGLOTTITIS	4	2.2	4	2.2	4	2.2
108	EPISTAXIS	8	2.9	8	2.9	8	2.9
109	OTHER ENT INFECTIONS	7	2.2	8	2.7	18	5.5
113	SINUSITIS (MNRH)	9	2.7	9	2.7	9	2.7
114	SORE THROAT (MNRH)	7	2.1	7	2.1	7	2.5
115	MISCELLANEOUS ENT DIAGNOSES (MNRH)	6	1.7	3	1.4	14	3.6
116	CROUP (MNRH)	3	1.2	3	1.2	3	1.2
125	TRACHEOSTOMY	167	54.0	166	54.1	179	65.2
126	RESECTION OF LUNG	12	4.7	15	6.2	18	7.6
127	MAJOR RESPIRATORY PROCEDURES	20	6.7	30	8.5	42	12.3
128	MINOR RESPIRATORY PROCEDURES	15	4.3	15	4.3	15	4.3
129	OTHER RESPIRATORY PROCEDURES	21	4.4	22	4.5	20	4.0
135	TUBERCULOSIS	27	9.8	30	10.7	35	14.9
136	RESPIRATORY FAILURE	35	9.5	34	10.2	37	12.3
137	RESPIRATORY INFECTIONS AND INFLAMMATIONS	19	5.7	25	8.0	28	9.2
138	RESPIRATORY NEOPLASMS	27	7.8	27	7.8	31	8.9
139	INTERSTITIAL DISEASE	19	6.5	20	6.7	28	8.8
140	CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)	19	4.6	19	5.8	20	6.8
141	PULMONARY EDEMA	19	5.4	19	5.4	19	5.4
142	CHRONIC BRONCHITIS	7	2.1	16	5.3	20	6.3
143	SIMPLE PNEUMONIA AND PLEURISY	7	2.5	15	4.8	20	6.7
144	PNEUMOTHORAX	7	2.3	10	3.5	15	5.0
145	TRACHEOBRONCHITIS	7	2.4	10	3.2	13	4.8
146	ASTHMA	4	1.8	12	3.3	16	5.4
147	OTHER RESPIRATORY DIAGNOSES	7	2.0	12	3.3	15	4.3
175	HEART OR LUNG TRANSPLANT	79	25.3	79	25.3	79	25.3
176	CARDIAC VALVE REPLACEMENT WITH HEART PUMP WITH CARDIAC	47	18.6	47	18.6	47	18.6

Appendix B - 2002/2003 ELOS and Trim Points

CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
177	CARDIAC VALVE REPLACEMENT WITH HEART PUMP WITHOUT CARDIAC	13	6.5	16	7.7	22	9.1
178	CORONARY BYPASS WITH HEART PUMP WITH CARDIAC CATH	33	13.5	33	13.5	37	15.8
179	CORONARY BYPASS WITH HEART PUMP WITHOUT CARDIAC CATH	13	6.4	13	6.4	16	7.7
181	OTHER CARDIO-THORACIC PROCEDURES WITH HEART PUMP WITH	56	18.5	48	16.3	49	17.5
182	OTHER CARDIO-THORACIC PROCEDURES WITH HEART PUMP WITHOUT	22	8.0	14	6.8	15	7.6
183	MAJOR CARDIO-THORACIC PROCEDURES WITHOUT HEART PUMP WITH	9	1.2	36	12.3	45	17.1
184	MAJOR CARDIO-THORACIC PROCEDURES WITHOUT HEART PUMP	10	2.4	12	5.3	18	7.1
185	PERMANENT PACEMAKER IMPLANT FOR SPECIFIED CARDIAC	30	7.2	30	7.2	33	10.9
186	PERMANENT PACEMAKER IMPLANT WITHOUT SPECIFIED CARDIAC	14	4.2	14	3.8	18	5.0
188	PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY W	13	4.6	13	4.6	20	6.7
189	PERCUTANEOUS TRANSLUMINAL CORONARY ANGIOPLASTY W/O	4	1.0	6	1.3	3	1.2
191	TEMPORARY CARDIAC PACEMAKER	19	4.9	20	5.0	27	9.0
193	CARDIAC PACEMAKER DEVICE REPLACEMENT OR REVISION	3	1.3	3	1.3	3	1.3
194	MINOR CARDIO-THORACIC PROCEDURES WITHOUT HEART PUMP	8	1.5	6	1.2	3	1.2
200	AMI, UNSTABLE ANGINA OR CARDIAC CATH WITH SHOCK OR	33	12.7	33	12.7	33	12.7
201	AMI WITH CARDIAC CATH WITH CONGESTIVE HEART FAILURE	31	11.9	31	11.9	37	14.6
202	AMI WITH CARDIAC CATH WITH VENTRICULAR TACHYCARDIA	26	10.7	26	10.7	26	10.7
203	AMI WITH CARDIAC CATH WITH ANGINA	16	7.9	16	7.9	30	11.2
204	AMI WITH CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	18	8.1	18	8.1	23	9.8
205	AMI WITHOUT CARDIAC CATH WITH CONGESTIVE HEART FAILURE	18	7.4	18	7.4	22	8.7
206	AMI WITHOUT CARDIAC CATH WITH VENTRICULAR TACHYCARDIA	10	4.9	10	4.9	16	6.8
207	AMI WITHOUT CARDIAC CATH WITH ANGINA	14	5.1	14	5.1	15	6.0
208	AMI WITHOUT CARDIAC CATH WITHOUT SPECIFIED CARDIAC	10	4.8	10	4.8	15	6.1
210	UNSTABLE ANGINA WITH CARDIAC CATH WITH SPECIFIED CARDIAC	26	9.2	26	9.2	29	11.9
211	UNSTABLE ANGINA WITH CARDIAC CATH WITHOUT SPECIFIED CARDIAC	19	8.2	19	8.2	23	9.4
212	UNSTABLE ANGINA WITHOUT CARDIAC CATH WITH SPECIFIED CARDIAC	13	4.3	13	4.3	16	5.5
213	UNSTABLE ANGINA WITHOUT CARDIAC CATH WITHOUT SPECIFIED	8	2.8	8	2.8	10	3.5
215	CARDIAC CATH WITH CONGESTIVE HEART FAILURE	25	9.0	25	9.0	31	11.5
216	CARDIAC CATH WITH VENTRICULAR TACHYCARDIA	21	6.1	22	6.2	26	8.2
217	CARDIAC CATH WITH UNSTABLE ANGINA	13	3.3	13	3.3	19	5.6
218	CARDIAC CATH WITHOUT SPECIFIED CARDIAC CONDITIONS	3	1.1	8	2.2	8	2.0
219	ENDOCARDITIS	42	12.8	42	12.8	42	12.8
220	PULMONARY EMBOLISM	17	5.8	17	5.8	18	7.4
222	HEART FAILURE	16	5.2	16	5.4	22	6.6
225	HYPERTENSIVE HEART DISEASE	16	4.9	16	4.9	20	6.1
226	OTHER CIRCULATORY DIAGNOSES	11	3.3	12	3.8	19	5.4
229	ATHEROSCLEROSIS (MNRH)	12	3.3	12	3.3	18	5.2
232	ACQUIRED VALVULAR DISORDERS (MNRH)	17	4.3	17	4.4	19	5.5
233	HYPERTENSION (MNRH)	10	3.0	10	3.0	12	3.7
234	CONGENITAL CARDIAC DISORDERS (MNRH)	10	2.9	24	7.3	24	7.6
235	ANGINA PECTORIS	7	2.1	7	2.1	9	2.8
237	ARRHYTHMIA	6	1.7	9	2.4	12	3.9
240	SYNCOPE AND COLLAPSE	6	1.9	7	2.1	12	3.3
242	CHEST PAIN	4	1.6	3	1.5	7	2.2
250	EXTENSIVE GASTROINTESTINAL PROCEDURES	34	12.1	34	12.1	34	12.1
251	GASTROSTOMY AND COLOSTOMY PROCEDURES	26	7.0	35	12.0	48	16.0
252	MAJOR ESOPHAGEAL, STOMACH AND DUODENUM PROCEDURES	28	11.0	28	11.1	36	12.7
253	MAJOR INTESTINAL AND RECTAL PROCEDURES	19	6.6	16	7.6	25	10.1
255	LESS EXTENSIVE ESOPHAGEAL, STOMACH AND DUODENUM	14	5.5	16	5.3	24	8.9
258	LAPAROTOMY	15	5.2	13	4.9	28	8.7
260	LESS EXTENSIVE INTESTINAL AND RECTAL PROCEDURES	14	4.2	9	2.6	13	4.9
261	COMPLICATED APPENDECTOMY	11	4.3	11	3.8	17	6.7
262	SIMPLE APPENDECTOMY	7	2.2	7	2.2	11	3.8
264	MINOR GASTROINTESTINAL PROCEDURES	8	3.0	5	3.4	6	3.8
265	ABDOMINAL LAPAROSCOPY	3	1.3	9	2.6	11	3.4
266	ANUS AND STOMAL PROCEDURES (MNRH)	8	2.1	7	1.9	12	3.4
269	BILATERAL HERNIA PROCEDURES	3	1.2	9	2.5	9	2.4
271	UNILATERAL HERNIA PROCEDURES (MNRH)	3	1.5	5	3.0	8	3.1
279	DIGESTIVE SYSTEM MALIGNANCY	22	6.2	22	6.2	24	7.3
281	G.I. HEMORRHAGE	7	2.0	10	3.2	13	4.5
285	COMPLICATED ULCER	14	4.4	14	4.4	21	5.7
286	UNCOMPLICATED ULCER	10	3.2	10	3.2	14	4.6
289	INFLAMMATORY BOWEL DISEASE	21	5.7	15	5.1	23	7.2
290	G.I. OBSTRUCTION	7	2.2	10	3.5	12	4.3
294	ESOPHAGITIS, GASTROENTERITIS AND MISCELLANEOUS DIGESTIVE	3	1.5	9	2.8	15	4.5
297	OTHER G.I. DIAGNOSES	6	1.7	14	3.8	15	4.7
310	LIVER TRANSPLANT	57	17.4	47	16.5	47	16.5
311	MAJOR PANCREATIC PROCEDURES	34	11.4	34	11.5	50	17.4
312	MAJOR HEPATOBILIARY PROCEDURES	19	8.1	19	8.1	19	8.1
313	COMMON DUCT EXPLORATION	32	8.6	32	8.6	32	8.6
314	OTHER HEPATOBILIARY AND PANCREATIC PROCEDURES	25	7.7	25	7.6	29	9.3
315	CHOLECYSTECTOMY	13	4.8	13	4.8	21	7.2
317	LAPAROSCOPIC CHOLECYSTECTOMY	7	2.1	7	2.0	11	2.9
320	MISCELLANEOUS HEPATOBILIARY AND PANCREATIC PROCEDURES	25	8.0	25	8.0	25	8.0
323	CIRRHOSIS AND ALCOHOLIC HEPATITIS	22	6.6	22	6.6	25	8.0
324	PANCREATIC CANCER OR OTHER MALIGNANCY OF HEPATOBILIARY	23	6.3	23	6.3	28	8.7
325	PANCREAS DISEASES EXCEPT MALIGNANCY	13	4.5	13	4.4	16	5.7
326	LIVER DISEASES EXCEPT CIRRHOSIS OR CANCER	11	2.8	18	5.3	26	7.5

Appendix B - 2002/2003 ELOS and Trim Points

CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
329	BILIARY TRACT DISEASES	12	3.1	11	3.2	14	4.9
350	MULTIPLE OR BILATERAL JOINT REPLACEMENT	15	6.2	15	6.2	16	6.4
351	JOINT REPLACEMENT FOR TRAUMA	19	8.3	19	8.3	27	10.2
352	HIP REPLACEMENT	12	5.3	12	5.3	13	5.9
354	KNEE REPLACEMENT	10	4.9	10	4.9	12	5.4
355	REATTACHMENT PROCEDURES OR LOWER EXTREMITY OR SHOULDER	24	7.1	25	7.4	29	8.4
356	REPAIR HIP AND FEMUR PROCEDURES	9	2.6	19	5.5	37	12.1
358	LOWER EXTREMITY PROCEDURES WITH INFECTION	23	6.0	16	5.2	29	8.6
359	UPPER EXTREMITY PROCEDURES WITH INFECTION	13	3.9	18	5.0	34	7.0
360	UPPER EXTREMITY AMPUTATIONS AND REVISIONS	27	6.8	29	7.1	42	10.4
361	MUSCULOSKELETAL BIOPSY FOR MALIGNANCY	27	6.4	28	6.4	54	14.6
362	MUSCULOSKELETAL BIOPSY WITHOUT MALIGNANCY	17	4.2	35	8.4	40	11.6
363	BACK AND NECK PROCEDURES WITH FUSION	14	6.7	10	3.4	16	5.6
365	BACK AND NECK PROCEDURES WITHOUT FUSION	7	2.2	7	2.2	15	4.4
367	SHOULDER ARTHROPLASTY	4	2.3	4	2.3	8	3.2
368	MAJOR HIP AND KNEE PROCEDURES	10	3.2	10	3.4	25	8.8
369	MAJOR LOWER EXTREMITY PROCEDURES	9	2.5	9	2.6	13	4.1
372	MAJOR UPPER EXTREMITY PROCEDURES	4	1.3	4	1.7	8	2.7
374	MINOR LOWER EXTREMITY PROCEDURES	3	1.2	3	1.4	9	2.7
375	MINOR UPPER EXTREMITY PROCEDURES	6	1.2	3	1.3	3	1.4
376	MISCELLANEOUS MUSCULOSKELETAL PROCEDURES	11	3.5	7	2.0	17	3.8
377	WOUND DEBRIDEMENT AND SKIN GRAFT FOR MUSCULOSKELETAL	7	1.8	14	3.1	31	6.1
378	SOFT TISSUE PROCEDURES (MNRH)	12	3.3	11	2.8	23	5.7
379	OTHER MUSCULOSKELETAL PROCEDURES (MNRH)	6	1.7	7	1.9	11	3.1
380	OTHER LOWER EXTREMITY PROCEDURES (MNRH)	3	1.5	3	1.4	3	1.5
381	HAND AND WRIST PROCEDURES (MNRH)	4	1.3	4	1.3	4	1.3
382	ARTHROSCOPY (MNRH)	12	3.1	11	3.0	14	3.2
383	JOINT REPLACEMENT FOR MALIGNANCY	39	13.6	39	13.6	39	13.6
384	BACK AND NECK PROCEDURES FOR MALIGNANCY	49	15.3	49	15.3	49	15.3
385	MAJOR ORTHOPAEDIC ONCOLOGY PROCEDURES	18	7.1	19	7.2	49	12.5
386	OTHER ORTHOPAEDIC ONCOLOGY PROCEDURES	16	3.9	17	3.9	19	5.1
391	SECONDARY NEOPLASMS AND PATHOLOGICAL FRACTURES	9	2.5	33	9.7	34	10.6
392	OSTEOMYELITIS	21	6.7	33	9.9	33	10.7
393	RHEUMATOID ARTHRITIS	14	3.9	25	7.7	26	7.6
394	SEPTIC ARTHRITIS	19	5.3	16	5.3	34	10.4
397	NON-INFLAMMATORY ARTHRITIS	13	4.0	13	4.0	24	7.0
398	OTHER INFLAMMATORY ARTHRITIS	10	3.3	19	5.8	22	6.8
399	ORTHOAEDIC AFTERCARE	7	2.3	14	3.7	30	7.2
401	OTHER MUSCULOSKELETAL MALIGNANCIES	19	5.7	16	4.9	47	14.8
402	DISC DISEASE	16	5.3	16	5.3	31	9.1
404	OTHER MUSCULOSKELETAL INFECTIONS	38	10.1	38	10.1	38	10.1
407	OTHER MUSCULOSKELETAL DISORDERS	7	2.1	11	3.2	24	5.2
409	BACK PAIN (MNRH)	3	1.4	12	3.3	21	5.6
411	SIGNS, SYMPTOMS AND DEFORMITIES (MNRH)	7	2.0	9	2.7	18	4.9
413	JOINT DERANGEMENTS (MNRH)	7	2.1	7	2.0	12	3.5
414	SPRAINS STRAINS AND MINOR INJURIES (MNRH)	4	1.6	9	2.7	13	3.9
425	SKIN GRAFT AND WOUND DEBRIDEMENT FOR DERMATOLOGIC DIS	3	1.2	3	1.3	7	2.1
427	SKIN GRAFT AND WOUND DEBRIDEMENT FOR SKIN ULCER OR	75	17.9	75	18.0	91	21.9
428	BREAST PROCEDURES EXCEPT BIOPSY AND LOCAL EXCISION WITHOUT	3	1.2	3	1.2	3	1.2
429	TOTAL MASTECTOMY FOR BREAST MALIGNANCY	3	1.5	3	1.5	7	2.0
432	SUBTOTAL MASTECTOMY AND OTHER BREAST PROCEDURES FOR	3	1.3	3	1.3	3	1.3
434	BREAST BIOPSY AND LOCAL EXCISION WITHOUT MALIGNANCY	3	1.1	3	1.1	3	1.1
435	PERIANAL AND PILONIDAL CYST PROCEDURES	6	1.6	6	1.6	6	1.6
436	PLASTIC SURGERY	4	1.6	5	1.3	6	1.8
437	OTHER DERMATOLOGICAL PROCEDURES WITHOUT MALIGNANCY OR	9	2.5	9	2.7	14	3.7
438	OTHER DERMATOLOGICAL PROCEDURES FOR MALIGNANCY OR SKIN	10	3.0	19	4.2	25	6.5
439	SKIN ULCER	31	9.5	31	9.5	31	9.5
440	MAJOR SKIN DISORDERS	10	3.1	16	4.9	20	6.2
443	MALIGNANT BREAST DISORDERS	24	7.0	24	7.0	33	9.8
446	NON-MALIGNANT BREAST DISORDERS	7	2.5	7	2.5	7	2.5
447	CELLULITIS	8	2.9	13	4.4	20	6.3
452	TRAUMA OF SKIN, SUBCUTANEOUS TISSUE AND BREAST	3	1.3	7	2.0	15	4.6
454	MINOR SKIN DISORDERS	7	2.1	12	3.2	16	5.3
476	ADRENAL AND PITUITARY PROCEDURES	18	7.5	11	4.1	16	6.0
477	PARATHYROID PROCEDURES	7	1.9	7	1.9	7	1.9
478	OBESITY PROCEDURES	9	2.7	9	2.7	9	2.7
479	THYROID PROCEDURES	3	1.5	4	1.7	7	2.1
480	THYROID GLOSSAL PROCEDURES	3	1.3	3	1.3	3	1.3
482	OTHER ENDOCRINE, NUTRITION AND METABOLIC PROCEDURES	34	8.9	45	11.7	54	15.2
483	DIABETES	7	2.3	13	4.1	20	6.2
485	NUTRITIONAL AND MISCELLANEOUS METABOLIC DISORDERS	7	1.9	12	3.6	19	5.7
487	CYSTIC FIBROSIS	26	10.3	34	10.7	33	10.8
488	INBORN ERRORS OF METABOLISM	11	2.9	13	4.2	29	7.1
489	ENDOCRINE DISORDERS	9	2.2	7	2.6	29	7.8
500	KIDNEY TRANSPLANT	25	10.6	25	10.4	29	11.3
501	URINARY DIVERSION AND AUGMENTATION	22	9.9	21	10.1	25	11.0
502	RADICAL PROSTATECTOMY	9	4.0	9	4.0	9	4.4
503	DIALYSIS PROCEDURES	43	7.7	38	7.4	55	11.5

Appendix B - 2002/2003 ELOS and Trim Points

CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
504	MAJOR URINARY TRACT PROCEDURES	10	3.6	12	4.7	15	6.0
505	RECONSTRUCTIVE UROLOGICAL PROCEDURES	10	3.2	10	3.2	14	3.6
506	OPEN PROSTATECTOMY	12	3.8	12	3.8	12	3.8
507	VASCULAR AND OTHER URINARY PROCEDURES	10	2.4	10	2.4	20	4.2
508	MINOR UPPER URINARY TRACT PROCEDURES	8	3.0	13	4.0	23	5.9
509	MINOR LOWER URINARY TRACT PROCEDURES	3	1.1	9	2.7	11	2.9
510	TRANSURETHRAL PROSTATECTOMY	7	2.2	7	2.2	4	2.1
512	OTHER TRANSURETHRAL OR BIOPSY PROCEDURES (MNRH)	7	1.4	3	1.5	6	1.7
514	MISCELLANEOUS URINARY TRACT PROCEDURES (MNRH)	6	1.8	6	1.8	6	1.8
520	RENAL FAILURE WITH DIALYSIS	33	10.2	34	10.2	49	15.2
521	RENAL FAILURE WITHOUT DIALYSIS	15	5.1	18	5.3	25	7.6
522	URINARY NEOPLASM	20	5.0	20	5.0	24	7.0
524	NEPHROTIC SYNDROME	14	4.6	25	6.7	37	11.7
525	NEPHROPATHY WITHOUT NEPHROTIC SYNDROME	14	3.9	21	5.2	16	5.9
526	MISCELLANEOUS NEPHROLOGICAL DIAGNOSIS	21	6.0	21	6.0	21	6.0
527	UPPER URINARY TRACT INFECTION	8	3.3	8	3.1	13	4.8
529	LOWER URINARY TRACT INFECTION	8	3.1	10	3.6	16	5.3
532	URINARY RETENTION AND OTHER FUNCTIONAL DISORDERS OF	11	2.9	9	2.7	12	3.8
534	MISCELLANEOUS UROLOGICAL DIAGNOSES (MNRH)	6	1.8	9	2.5	14	3.9
535	HEMATURIA (MNRH)	3	1.4	7	2.1	8	2.9
536	URINARY OBSTRUCTION (MNRH)	6	1.8	6	1.8	9	2.6
538	ADMISSION FOR DIALYSIS (MNRH)	3	1.3	3	1.3	3	1.3
550	MAJOR PELVIC AND RETROPERITONEUM PROCEDURES	14	4.8	14	4.8	14	4.8
551	PENIS PROCEDURES	3	1.1	9	1.4	10	2.7
552	TESTES PROCEDURES	3	1.1	3	1.3	11	2.7
554	MISCELLANEOUS MALE REPRODUCTIVE SYSTEM PROCEDURES (MNRH)	4	1.2	4	1.2	4	1.2
555	CIRCUMCISION (MNRH)	3	1.1	3	1.2	3	1.3
560	MALIGNANCY OF MALE REPRODUCTIVE ORGAN	15	5.1	15	5.1	15	5.1
561	MALE REPRODUCTIVE SYSTEM INFLAMMATION	7	2.1	10	3.3	11	3.8
562	OTHER MALE REPRODUCTIVE SYSTEM DIAGNOSES	7	2.0	9	2.2	11	2.9
563	MISCELLANEOUS MALE REPRODUCTIVE SYSTEM DIAGNOSES (MNRH)	3	1.3	3	1.3	3	1.3
575	PELVIC EXENTERATION	55	22.4	55	22.4	55	22.4
576	RADICAL HYSTERECTOMY AND VULVECTOMY	9	3.8	9	3.8	9	4.3
577	MAJOR GYNECOLOGICAL PROCEDURES FOR OVARIAN OR ADNEXAL	11	4.5	11	4.5	15	6.3
578	MAJOR GYNECOLOGICAL PROCEDURES FOR MALIGNANCY EXCEPT	5	3.3	5	3.3	9	4.2
579	MAJOR UTERINE AND ADNEXAL PROCEDURES WITHOUT MALIGNANCY	7	2.4	8	3.0	9	3.7
581	RECONSTRUCTIVE GYNECOLOGICAL PROCEDURES	8	2.6	8	2.6	8	3.0
582	OTHER GYNECOLOGICAL PROCEDURES	5	2.1	12	3.2	12	3.3
583	RADIO-IMPLANT FOR MALIGNANCY	8	3.0	8	3.0	8	2.6
584	VAGINA, CERVIX AND VULVA PROCEDURES	3	1.4	3	1.4	7	2.2
585	GYNECOLOGICAL LAPAROSCOPY (MNRH)	3	1.4	3	1.4	3	1.4
586	TUBAL INTERRUPTION (MNRH)	3	1.2	3	1.2	3	1.2
587	MISCELLANEOUS GYNECOLOGICAL PROCEDURES (MNRH)	3	1.2	3	1.2	10	2.3
592	MALIGNANCY OF FEMALE REPRODUCTIVE ORGAN	22	5.8	22	5.9	32	9.2
594	FEMALE REPRODUCTIVE SYSTEM INFECTION	12	4.0	8	3.0	8	3.0
595	OTHER FEMALE REPRODUCTIVE SYSTEM DIAGNOSES AND INJURIES	8	2.2	8	2.2	8	2.2
596	MISCELLANEOUS GYNECOLOGICAL DIAGNOSES (MNRH)	3	1.5	3	1.4	14	3.6
599	PREMATURE LABOUR	11	4.3	11	4.3	11	4.3
600	MAJOR PROCEDURES IN PREGNANCY OR CHILDBIRTH	11	4.3	11	4.3	11	4.3
601	REPEAT CAESAREAN DELIVERY WITH COMPLICATING DIAGNOSIS	5	3.4	5	3.4	5	3.4
602	CAESAREAN DELIVERY WITH COMPLICATING DIAGNOSIS	9	4.1	9	4.1	9	4.1
603	REPEAT CAESAREAN DELIVERY	5	3.0	5	3.0	5	3.0
604	CAESAREAN DELIVERY	6	3.6	6	3.6	6	3.6
605	FETAL SURGERY	17	1.3	17	1.3	17	1.3
606	VAGINAL DELIVERY WITH STERILIZATION PROCEDURES	8	3.0	8	3.0	8	3.0
607	VAGINAL DELIVERY WITH MINOR PROCEDURES	5	2.5	5	2.5	5	2.5
608	VAGINAL DELIVERY AFTER CAESAREAN (VBAC) WITH COMPLICATING	4	2.1	4	2.1	4	2.1
609	VAGINAL DELIVERY WITH COMPLICATING DIAGNOSIS	8	2.8	4	2.3	4	2.3
610	VAGINAL DELIVERY AFTER CAESAREAN DELIVERY (VBAC)	4	1.9	4	1.9	4	1.9
611	VAGINAL DELIVERY	4	2.3	4	1.9	4	1.9
612	ECTOPIC PREGNANCY WITH MAJOR PROCEDURES	8	2.8	8	2.8	8	2.8
613	ECTOPIC PREGNANCY WITH MINOR PROCEDURES	3	1.4	3	1.4	3	1.4
614	ECTOPIC PREGNANCY	3	1.3	3	1.3	3	1.3
615	THREATENED ABORTION	3	1.4	3	1.4	3	1.4
616	ABORTIVE OUTCOME WITH INJECTION	3	1.4	3	1.4	3	1.4
617	ABORTIVE OUTCOME WITH D AND C	3	1.1	3	1.1	3	1.1
618	ABORTIVE OUTCOME	4	1.2	4	1.2	4	1.2
619	FALSE LABOUR LOS <3 DAYS (MNRH)	3	1.2	3	1.2	3	1.2
620	POST-PARTUM DIAGNOSIS WITH PROCEDURES OTHER THAN D AND C	10	3.1	10	3.1	10	3.1
621	POST-PARTUM DIAGNOSIS WITH D AND C	3	1.4	3	1.4	3	1.4
622	POST-PARTUM DIAGNOSIS	7	2.3	7	2.3	7	2.3
623	ANTEPARTUM DIAGNOSIS WITH COMPLICATING DIAGNOSIS	9	2.4	9	2.4	9	2.4
624	ANTEPARTUM DIAGNOSIS	3	1.4	3	1.4	3	1.4
625	NEONATES WEIGHT <750 GRAMS	165	100.6	165	100.6	165	100.6
626	NEONATES WEIGHT 750-999 GRAMS	189	87.2	189	87.2	189	87.2
627	NEONATES WEIGHT 1000-1499 GM WITH CATASTROPHIC DIAGNOSIS	97	38.8	97	38.8	97	38.8
628	NEONATES WEIGHT 1000-1499 GM WITHOUT CATASTROPHIC DIAGNOSIS	106	37.2	106	37.2	106	37.2
630	NEONATES WEIGHT 1500-1999 GM WITH CATASTROPHIC DIAGNOSIS	56	26.8	56	26.8	56	26.8

Appendix B - 2002/2003 ELOS and Trim Points

CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
631	NEONATES WEIGHT 1500-1999 GM WITH MAJOR PROBLEM DIAGNOSIS	66	28.6	66	28.6	66	28.6
632	NEONATES WEIGHT 1500-1999 GM WITH MOD OR MINOR OR NO	48	16.6	48	16.6	48	16.6
636	NEONATES WEIGHT 2000-2499 GM WITH CATASTOPHIC DIAGNOSIS	46	22.6	46	22.6	46	22.6
637	NEONATES WEIGHT 2000-2499 GM WITH MAJOR PROBLEM DIAGNOSIS	43	15.1	43	15.1	43	15.1
638	NEONATES WEIGHT 2000-2499 GM WITH MODERATE PROBLEM	32	10.1	32	10.1	32	10.1
639	NEONATES WEIGHT 2000-2499 GM WITH MINOR PROBLEM DIAGNOSIS	13	4.6	13	4.6	13	4.6
640	NEONATES WEIGHT 2000-2499 GM WITH NO PROBLEM DIAGNOSIS	7	2.1	7	2.1	7	2.1
643	NEONATES WEIGHT >2500 GM WITH CATASTROPHIC DIAGNOSIS	38	14.9	38	14.9	38	14.9
644	NEONATES WEIGHT >2500 GM WITH MAJOR PROBLEM DIAGNOSIS	13	4.5	13	4.5	13	4.5
645	NEONATES WEIGHT >2500 GM WITH MODERATE PROBLEM DIAGNOSIS	8	3.1	8	3.1	8	3.1
646	NEONATES WEIGHT >2500 GM WITH CAESARIAN DELIVERY	5	3.2	5	3.2	5	3.2
647	NEONATES WEIGHT >2500 GM WITH MINOR PROBLEM DIAGNOSIS	4	2.2	4	2.2	4	2.2
648	NEONATES WEIGHT >2500 GM (NORMAL NEWBORN)	4	1.7	4	1.7	4	1.7
650	TRACHEOSTOMY AND GASTROSTOMY PROCEDURES FOR TRAUMA	158	57.4	109	40.9	101	41.7
651	INTRACRANIAL PROCEDURES WITH SPINAL PROCEDURES FOR TRAUMA	33	17.0	33	17.0	33	17.0
652	INTRACRANIAL PROCEDURES WITH FEMUR PROCEDURES FOR TRAUMA	37	26.0	37	26.0	37	26.0
653	INTRACRANIAL OR FEMUR PROCEDURES WITH THORACO-ABDOMINAL	69	22.8	69	22.8	69	22.8
654	INTRACRANIAL PROCEDURES W WOUND DEBRIDEMENT OR LOWER	58	27.5	58	27.5	58	27.5
655	SPINAL PROCEDURES WITH FEMUR PROCEDURES FOR TRAUMA	60	21.6	60	22.6	60	23.4
656	SPINAL PROCEDURES WITH THORACO-ABDOMINAL PROCEDURES FOR	61	23.3	61	23.3	61	23.3
657	SPINAL PROCEDURES WITH WOUND DEBRIDEMENT OR LOWER	40	11.8	40	11.8	40	11.8
658	FEMUR PROCEDURES WITH WOUND DEBRIDEMENT OR LOWER	55	16.9	45	14.8	56	18.5
659	THORACO-ABDOMINAL PROC W WOUND DEBRIDEMENT OR LOWER	38	17.0	38	14.9	38	14.9
660	INTRACRANIAL PROCEDURES FOR TRAUMA	31	8.9	38	11.4	42	12.2
661	SPINAL PROCEDURES FOR TRAUMA	30	9.8	24	9.3	37	14.3
662	FEMUR OR PELVIC PROCEDURES FOR TRAUMA	13	4.2	18	7.1	27	9.8
663	THORACO-ABDOMINAL PROCEDURES FOR TRAUMA	21	7.4	21	7.7	31	11.0
664	WOUND DEBRIDEMENT AND SKIN GRAFT FOR TRAUMA	20	4.8	25	7.1	36	9.7
665	ELEVATED SKULL FRACTURES	13	3.7	13	3.7	13	3.7
666	MAJOR LOWER EXTREMITY PROCEDURES FOR TRAUMA	7	2.1	8	2.7	19	5.9
667	MINOR LOWER EXTREMITY PROCEDURES FOR TRAUMA	8	2.4	9	2.5	9	2.7
668	MISCELLANEOUS MUSCULOSKELETAL PROCEDURES FOR TRAUMA	7	2.1	7	2.1	7	2.1
669	VASCULAR REPAIR FOR TRAUMA	6	1.7	6	1.7	6	1.7
670	UPPER EXTREMITY PROCEDURES FOR TRAUMA	3	1.3	7	2.0	10	3.1
674	INTRACRANIAL INJURIES WITH SPINAL INJURIES	30	10.1	31	9.2	27	8.3
675	INTRACRANIAL INJURIES WITH FRACTURES OF FEMUR OR PELVIS	42	10.8	42	10.8	42	10.8
676	INTRACRANIAL INJURIES WITH THORACO-ABDOMINAL INJURIES	23	8.1	22	7.6	25	9.9
677	SPINAL INJURIES WITH FRACTURES OF FEMUR	19	7.6	20	7.9	33	14.6
678	SPINAL INJURIES WITH THORACO-ABDOMINAL INJURIES	19	6.8	18	6.9	42	12.0
679	FRACTURES OF FEMUR WITH THORACO-ABDOMINAL INJURIES	19	6.8	20	6.7	40	14.4
680	FEMUR OR PELVIC FRACTURES AND DISLOCATIONS	24	5.5	22	6.5	31	9.0
681	FROSTBITE	25	7.8	25	7.8	25	7.8
682	SPINAL INJURIES	8	3.0	15	4.5	33	9.6
683	INTRACRANIAL INJURIES	12	3.3	14	4.0	33	8.7
684	FRACTURE OF HUMERUS	4	1.8	13	3.3	26	6.9
685	HIP AND THIGH INJURIES	11	3.2	12	3.3	16	5.3
686	MAJOR NERVE INJURIES	6	1.6	6	1.6	6	1.5
687	THORACO-ABDOMINAL INJURIES	13	4.4	12	3.9	22	6.8
688	WEIGHT BEARING INJURIES	3	1.4	9	2.7	26	7.6
689	GENITO-URINARY INJURIES	12	3.2	12	3.2	12	3.2
690	CRUSHING INJURIES AND CONTUSIONS	3	1.4	7	1.9	15	4.7
691	MINOR LOWER EXTREMITY FRACTURES	11	3.0	11	3.0	11	3.0
692	WOUNDS	3	1.4	6	1.7	12	3.5
693	AMPUTATIONS OR VASCULAR AND OTHER NERVE INJURIES	3	1.3	3	1.4	15	3.5
694	FACIAL INJURIES	3	1.4	6	1.7	14	3.3
695	OTHER CRANIAL INJURIES	6	1.3	6	1.8	14	3.8
696	UPPER EXTREMITY FRACTURES	3	1.1	3	1.4	17	4.3
700	BONE MARROW TRANSPLANT	96	38.7	47	22.6	47	22.4
701	SPLENECTOMY	8	3.3	13	4.1	35	9.5
703	OTHER O.R. PROCEDURES OF BLOOD AND BLOOD-FORMING ORGANS	17	3.5	27	5.9	35	8.1
704	RED BLOOD CELL DISORDERS	10	3.4	14	3.9	18	4.9
709	COAGULATION DISORDERS	7	2.0	12	3.6	19	5.4
710	RETICULOENDOTHELIAL AND IMMUNITY DISORDERS	10	3.4	11	4.4	16	5.5
725	MAJOR LEUKEMIA AND LYMPHOMA PROCEDURES	18	4.7	18	4.6	24	6.0
726	ACUTE LEUKEMIA WITHOUT MAJOR PROCEDURES	55	15.3	75	19.3	46	12.6
728	LYMPHOMA AND CHRONIC LEUKEMIA WITH OTHER PROCEDURES	35	8.9	35	8.5	58	13.4
730	LYMPHOMA AND CHRONIC LEUKEMIA	27	6.9	21	6.1	30	7.8
733	MAJOR ILL-DEFINED NEOPLASM PROCEDURES	22	6.2	22	6.2	22	6.2
734	ILL-DEFINED NEOPLASM WITH OTHER PROCEDURES	10	2.4	18	4.4	14	3.3
735	RADIATION THERAPY	4	2.4	4	2.4	15	4.7
736	CHEMOTHERAPY	8	2.9	8	2.9	8	2.9
737	OTHER POORLY DIFFERENTIATED NEOPLASTIC DIAGNOSES	26	7.6	27	7.8	33	8.9
750	MULTISYSTEMIC OR UNSPECIFIED SITE INFECTIONS WITH SURGERY	30	8.5	41	10.5	66	18.8
751	SEPTICEMIA	10	3.1	20	6.7	25	8.0
756	POST-OPERATIVE AND POST-TRAUMATIC INFECTIONS	11	3.8	13	4.3	20	6.1
757	VIRAL ILLNESS	7	2.2	10	3.1	15	4.5
761	FEVER OF UNKNOWN ORIGIN	7	2.1	10	3.4	15	4.5
763	OTHER INFECTIOUS DIAGNOSES	9	2.9	18	5.1	31	9.4

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CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
764	DEPRESSIVE MOOD DISORDERS WITH ECT	84	32.7	84	32.7	84	32.7
765	DEPRESSIVE MOOD DISORDERS WITHOUT ECT WITH AXIS III DIAGNOSIS	38	12.9	43	15.5	55	18.9
766	DEPRESSIVE MOOD DISORDERS WITHOUT ECT WITHOUT AXIS III	28	11.4	37	13.7	50	16.9
767	DEPRESSIVE MOOD DISORDERS LOS <6 DAYS	10	2.7	10	2.7	10	2.7
768	BIPOLAR MOOD DISORDERS, MANIC WITH ECT	96	33.4	96	33.4	96	33.4
769	BIPOLAR MOOD DISORDERS, MANIC WITHOUT ECT WITH AXIS III	60	20.7	60	20.7	60	20.7
770	BIPOLAR MOOD DISORDERS, MANIC WITHOUT ECT WITHOUT AXIS III	46	16.2	43	16.1	47	15.7
771	BIPOLAR MOOD DISORDERS LOS <6 DAYS	10	2.7	10	2.7	10	2.7
772	DEMENTIA WITH OR WITHOUT DELIRIUM WITH AXIS III DIAGNOSIS	39	12.0	39	12.0	39	12.0
773	DEMENTIA WITH OR WITHOUT DELIRIUM WITHOUT AXIS III DIAGNOSIS	32	8.6	32	8.6	27	7.5
774	ORGANIC MENTAL DISORDERS INDUCED BY DRUGS	20	5.4	20	5.4	20	5.4
775	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS WITH ECT	107	42.3	107	42.7	110	42.5
776	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS W/O ECT WITH	140	43.1	62	20.4	39	13.3
777	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS W/O ECT OR AXIS	42	16.3	48	16.5	44	14.0
778	SCHIZOPHRENIA AND OTHER PSYCHOTIC DISORDERS LOS <6 DAYS	10	2.7	10	2.7	10	2.7
779	DISSOCIATIVE DISORDERS	19	4.6	16	4.9	9	3.0
780	ALCOHOL INDUCED ORGANIC MENTAL DISORDERS WITH AXIS III	19	5.4	19	5.4	34	10.2
781	ALCOHOL INDUCED ORGANIC MENTAL DISORDERS WITHOUT AXIS III	10	3.1	10	3.1	18	5.4
783	PSYCHOACTIVE SUBSTANCE DEPENDENCE	14	4.3	12	3.7	22	6.3
784	PSYCHOACTIVE SUBSTANCE ABUSE	3	1.3	7	2.0	12	3.2
785	DEVELOPMENTAL DELAY	44	10.1	31	7.7	31	7.6
786	DISRUPTIVE BEHAVIOUR DISORDERS	18	4.7	17	4.5	19	4.7
787	EATING DISORDERS	93	22.1	101	24.6	100	24.5
788	ORGANIC MENTAL DISORDERS ASSOCIATED W PHYSICAL DISORDERS W	33	9.4	33	9.5	35	11.5
789	ORGANIC MENTAL DISORDERS ASSOCIATED W PHYSICAL DISORDERS	30	8.3	31	8.3	23	7.5
790	SOMATIFORM DISORDERS	14	3.6	12	3.5	26	7.5
791	ANXIETY DISORDERS (MNRH)	24	6.0	19	4.5	13	3.9
792	ADJUSTMENT DISORDERS (MNRH)	14	3.8	12	3.4	19	5.3
793	PERSONALITY DISORDERS WITH AXIS III DIAGNOSIS (MNRH)	22	5.8	22	5.8	22	5.8
794	PERSONALITY DISORDERS WITHOUT AXIS III DIAGNOSIS (MNRH)	9	2.5	14	3.6	16	5.6
795	SEXUAL DYSFUNCTION AND SEXUAL DISORDERS (MNRH)	27	6.5	25	6.1	23	5.8
796	SPECIFIC DEVELOPMENTAL DISORDERS (MNRH)	49	12.7	60	13.8	60	13.8
797	MISCELLANEOUS PSYCHIATRIC DIAGNOSES (MNRH)	25	6.8	10	3.2	11	3.4
803	EXTENSIVE PROCEDURES FOR INJURY OR COMPLICATION OF	28	6.9	27	7.8	31	9.4
804	NON-EXTENSIVE PROCEDURES FOR INJURY OR COMPLICATION OF	8	1.9	17	3.8	20	4.9
805	MNRH PROCEDURES FOR INJURY OR COMPLICATION OF TREATMENT	3	1.2	7	2.0	17	4.3
811	ALLERGIC REACTION	3	1.1	3	1.4	6	1.7
813	DRUG REACTIONS	3	1.4	7	1.9	13	3.8
818	COMPLICATIONS OF TREATMENT	6	1.8	12	3.3	12	3.8
823	MINOR INJURIES AND TRAUMA DIAGNOSIS	3	1.3	6	1.6	15	4.2
830	EXTENSIVE BURNS WITH SKIN GRAFT WOUND DEBRIDEMENT OR OTHER	77	29.1	80	28.5	80	27.6
831	EXTENSIVE BURNS WITHOUT BURN PROCEDURES	30	10.3	28	9.0	28	8.5
832	NON-EXTENSIVE BURNS WITH SKIN GRAFT	54	11.7	34	11.2	71	25.6
833	NON-EXTENSIVE BURNS WITH WOUND DEBRIDEMENT OR OTHER BURN	44	29.0	44	29.0	44	29.0
834	NON-EXTENSIVE BURNS WITHOUT BURN PROCEDURES	17	4.1	17	4.1	17	4.1
840	OTHER ADMISSIONS WITH SURGERY	5	1.3	13	2.7	91	23.9
841	REHABILITATION	47	14.8	47	14.9	70	24.6
842	SIGNS AND SYMPTOMS	7	1.8	15	4.4	21	6.2
846	AFTERCARE FOLLOWING SURGERY OR TREATMENT	6	1.2	3	1.2	6	1.3
847	OTHER SPECIFIED AFTERCARE	9	2.2	27	8.3	36	10.0
849	MULTIPLE OR UNSPECIFIED CONGENITAL ANOMALIES	11	2.7	11	2.7	11	2.7
850	PERINATAL CONDITIONS AGE >28 DAYS	58	15.5	58	15.5	58	15.5
851	OTHER FACTORS CAUSING HOSPITALIZATION	6	1.7	13	3.1	31	7.1
852	PROCEDURES CANCELLED (MNRH)	3	1.0	3	1.0	3	1.0
860	RESPIRATORY TRACT DISORDERS WITH HIV	29	8.4	28	8.5	28	8.5
861	CNS INFECTION WITH HIV	69	20.6	69	20.6	69	20.6
862	GI AND HEPATOBIILIARY DISORDERS WITH HIV	27	7.3	27	7.3	27	7.3
863	OPHTHALMIC DISORDERS WITH HIV	50	13.3	50	13.3	50	13.3
864	BLOOD INFECTIONS WITH HIV	22	8.1	22	8.1	22	8.1
865	LYMPHOMA WITH HIV	40	12.5	40	12.5	40	12.5
866	PSYCHOSOCIAL CONDITIONS WITH HIV	19	6.2	19	6.2	19	5.8
867	OTHER CONDITIONS ASSOCIATED WITH HIV	29	4.7	29	4.7	29	4.7
868	MISCELLANEOUS CONDITIONS WITH HIV	29	7.5	27	7.6	27	7.6
880	AMPUTATION OF LOWER LIMB EXCEPT TOE WITH MAJOR VASCULAR	74	26.1	74	26.1	74	26.1
881	AMPUTATION OF LOWER LIMB EXCEPT TOE	46	14.4	46	14.4	46	14.4
882	WOUND DEBRIDEMENT OR OTHER AMPUTATION WITH MAJOR	35	13.2	35	13.2	35	13.2
883	WOUND DEBRIDEMENT AND GRAFTING OTHER THAN HAND	28	7.0	29	7.0	33	9.9
884	OTHER AMPUTATIONS INCLUDING TOE	34	9.1	34	9.1	40	11.9
885	AORTIC REPLACEMENT	16	7.5	16	7.5	21	8.9
887	VASCULAR BYPASS SURGERY	17	6.7	17	6.7	24	8.3
890	OTHER THORACO-ABDOMINAL PROCEDURES	20	6.0	23	6.7	29	9.6
891	VASCULAR REPAIR	12	3.8	12	3.8	19	5.7
892	OTHER VASCULAR PROCEDURES	8	2.1	8	2.1	8	2.1
893	VEIN LIGATION AND STRIPPING (MNRH)	3	1.2	3	1.2	3	1.2
895	DEEP VEIN THROMBOPHLEBITIS	19	6.1	20	6.2	21	7.0
898	PERIPHERAL VASCULAR DISEASE	5	1.2	17	4.2	20	5.4
900	EXTENSIVE UNRELATED O.R. PROCEDURES	33	8.5	39	11.1	54	18.0
901	NON-EXTENSIVE UNRELATED O.R. PROCEDURES	25	5.3	39	9.3	49	15.2

Appendix B - 2002/2003 ELOS and Trim Points

CMG	CMG Title	Age 0-17		Age 18-69		Age 70 +	
		Trim	ELOS	Trim	ELOS	Trim	ELOS
902	POST-OPERATIVE COMPLICATIONS WITH UNRELATED O.R.	7	2.3	23	5.1	41	10.3
906	UNRELATED O.R. PROCEDURES (MNRH)	7	1.7	27	6.3	43	11.6
908	OTHER MAJOR PROCEDURES FOR GYNECOLOGICAL MALIGNANCY	13	4.0	13	4.0	13	4.0
909	OBSOLETE PSYCHIATRIC DIAGNOSES (MNRH)	26	6.6	18	5.2	30	10.5
910	DIAGNOSIS NOT GENERALLY HOSPITALIZED	-	2.5	-	2.5	-	2.5
912	OBSTETRIC CODES INVALID AS MOST RESPONSIBLE DIAGNOSIS	-	3.0	-	3.0	-	3.0
996	CADAVERIC DONOR ORGAN AND TISSUE RETRIEVAL	-	0.0	-	0.0	-	0.0
997	STILLBIRTHS	-	0.0	-	0.0	-	0.0
998	NEONATE WITH CATASTROPHIC DIAGNOSIS LOS <6 DAYS	-	2.7	-	2.7	-	2.7
999	UNGROUPABLE DATA	-	6.6	-	6.6	-	6.6

Appendix C - Finite Mixture Models

Model Building

First, consider an N dimensional vector $\mathbf{X} = \{x_1, \dots, x_N\}$, where N is the number of patients assigned to a particular CMG and age group combination. Each element of \mathbf{X} is the length of stay of each patient. The mixture model is defined as

$$P(\mathbf{x}; \Psi) = \sum_{c=1}^C \alpha_c P_c(\mathbf{x}; \lambda_c),$$

where the scalar α_c is the mixture proportion of the c^{th} component, and satisfies

$$0 < \alpha_c \leq 1$$

and

$$\sum_{c=1}^C \alpha_c = 1.$$

The function $P_c(\mathbf{x}; \lambda_c)$ is the probability density of the c^{th} component of the mixture model with parameter vector λ_c (in the discrete case, $P_c(\mathbf{x}; \lambda_c)$ is the probability mass function). The parameter vector for the mixture model is then

$$\Psi = (\alpha_1, \dots, \alpha_C, \lambda_1, \dots, \lambda_C),$$

where C , the number of mixture distributions, is finite.

The log-likelihood of the finite mixture model is written

$$\begin{aligned} \log L(\Psi) &= \log \prod_{i=1}^N P(x_i; \Psi) \\ &= \sum_{i=1}^N \log \left[\sum_{c=1}^C \alpha_c P_c(x_i; \lambda_c) \right]. \end{aligned}$$

Estimates of the parameters are obtained by solving the partial differential equation $\partial \log L(\Psi) / \partial \Psi = 0$. However, the parameter space is irregular and cannot typically be solved in an iterative fashion.

The EM Algorithm and Finite Mixture Models

When first described by Dempster, Laird and Rubin (1977), the EM algorithm was applied to describing, and for solving, parameters of a mixture of distributions. Since that application, the EM algorithm has become the standard method for maximizing likelihood functions of finite mixture models. Jansen (1993) describes how mixtures of generalized linear models (Weibull distributions) are easily incorporated into standard statistical packages.

First, define the indicator variable

$$Z_{ic} = \begin{cases} 1 & x_i \text{ originated from the } c^{\text{th}} \text{ component} \\ 0 & \text{otherwise,} \end{cases}$$

where z_{ic} are the realizations of Z_{ic} . The log-likelihood of the complete (and unobservable data) is written

$$\begin{aligned} \log L(\Psi) &= \log \prod_{i=1}^N P(x_i; \Psi) \\ &= \sum_{i=1}^N \sum_{c=1}^C z_{ic} (\log \alpha_c P_c(x_i; \lambda_c)) \\ &= \sum_{i=1}^N \sum_{c=1}^C z_{ic} (\log \alpha_c + \log P_c(x_i; \lambda_c)). \end{aligned}$$

By treating the z_{ic} as missing data, the EM algorithm maximizes this function in a two-step process.

The Expectation Step (E-Step)

In the E-step, the conditional expectation of the log-likelihood is calculated, given \mathbf{x} and the current evaluation of Ψ , $\Psi^{(k)}$. The conditional expectation of $\log L(\Psi)$ is written

$$Q(\Psi; \Psi^{(k)}) = E_{\Psi^{(k)}} [\log L(\Psi) \mid \mathbf{x}].$$

The current conditional expectation of Z_{ic} given the observed data is

$$\begin{aligned} E_{\Psi^{(k)}} [Z_{ic} \mid \mathbf{x}] &= 1 \times Pr_{\Psi^{(k)}} (Z_{ic} = 1 \mid \mathbf{x}) + Pr_{\Psi^{(k)}} (Z_{ic} = 0 \mid \mathbf{x}) \\ &= P(c \mid x_i; \Psi^{(k)}). \end{aligned}$$

By Bayes theorem

$$\begin{aligned} P(c \mid x_i; \Psi^{(k)}) &= \frac{Pr(x_i, c; \Psi^{(k)})}{Pr(x_i; \Psi^{(k)})} \\ &= \frac{\alpha_c P_c(x_i; \lambda_c^{(k)})}{\sum_{c=1}^C \alpha_c P_c(x_i; \lambda_c^{(k)})}, \end{aligned}$$

the posterior probability that x_i belongs to the c^{th} component of the mixture.

The conditional expectation of the log-likelihood is then written

$$\begin{aligned}
Q(\Psi; \Psi^{(k)}) &= E_{\Psi^{(k)}} [\log L(\Psi) \mid \mathbf{x}] \\
&= E_{\Psi^{(k)}} \left[\sum_{i=1}^N \sum_{c=1}^C z_{ic} (\log \alpha_c + \log P_c(x_i; \boldsymbol{\lambda}_c)) \mid \mathbf{x} \right] \\
&= \sum_{i=1}^N \sum_{c=1}^C E_{\Psi^{(k)}} [z_{ic} \mid \mathbf{x}] (\log \alpha_c + \log P_c(x_i; \boldsymbol{\lambda}_c)) \\
&= \sum_{i=1}^N \sum_{c=1}^C P(c \mid x_i; \Psi^{(k)}) (\log \alpha_c + \log P_c(x_i; \boldsymbol{\lambda}_c))
\end{aligned}$$

The Maximization Step (M-step)

In the M-step, the quantity $Q(\Psi; \Psi^{(k)})$ is maximized with respect to Ψ to obtain updated parameter estimates. The updated parameters are solutions of

$$\sum_{i=1}^N \sum_{c=1}^C P(c \mid x_i; \Psi^{(k)}) \frac{\partial [\log \alpha_c + \log P_c(x_i; \boldsymbol{\lambda}_c)]}{\partial \Psi} = 0.$$

The partial differential equation can be expressed as two systems of equations, the mixture proportions and the parameter vectors of the component density functions. These are written

$$\begin{aligned}
\sum_{i=1}^N \sum_{c=1}^C P(c \mid x_i; \Psi^{(k)}) \frac{\partial \log \alpha_c}{\partial \alpha_c} &= 0, \\
\sum_{i=1}^N \sum_{c=1}^C P(c \mid x_i; \Psi^{(k)}) \frac{\partial \log P_c(x_i; \boldsymbol{\lambda}_c)}{\partial \boldsymbol{\lambda}_c} &= 0.
\end{aligned}$$

Solutions for the mixture proportions cannot be solved iteratively because of the constraint $\sum_{c=1}^C \alpha_c = 1$. Lagrange multipliers are used to write $Q_\gamma(\Psi; \Psi^{(k)}) = Q(\Psi; \Psi^{(k)}) + \gamma(\sum_{c=1}^C \alpha_c - 1)$. Solving, the updated estimates of the mixture proportions are

$$\alpha_c^{(k+1)} = \frac{1}{N} \sum_{i=1}^N P(c \mid x_i; \Psi^{(k)}).$$

To solve for the parameter vectors of the component density functions, $\boldsymbol{\lambda}_c^{(k+1)}$, the probability mass functions are differentiated.

Appendix D - Application to ICD-10-CA and CCI Data

To relate the application of finite mixture models to the development of PAC-10 cost weights, define

- \mathbf{X}_1 , the vector of length of stays of all patients in a specific CMG and age group, 2002/2003 activity;
- \mathbf{X}_2 , the vector of length of stays of all patients in a specific CMG and age group, 1999/2000 to 2001/2002 activity.

For each of \mathbf{X}_1 and \mathbf{X}_2 , a mixture of Poisson distributions (i.e., $f(x_i) = \frac{e^{-\lambda}\lambda^{x_i}}{x_i!}$) is fit. The Poisson distribution is chosen because the length of stay values are integer and the variance increases with the mean. Simulations demonstrate that a mixture of Poissons is suitable to fit the distribution of length of stay within CMG and age group combinations, although alternative parametric forms could be substituted.

Due to the inexact mapping of ICD-10-CA to ICD-9, the magnitude of patients moving between CMG is unknown. To account for our uncertainty regarding movement of patients between CMG, the number of mixtures is not pre-determined.

The number of components in the mixture (C_1 and C_2) is chosen based on general model selection theory (Leroux, 1992); the Akaike information criteria (AIC [Akaike, 1973]) which penalizes the likelihood based on the number of model parameters used. The model with the minimum AIC statistic is selected. For each of \mathbf{X}_1 and \mathbf{X}_2 , parameter sets $\hat{\Psi}_1, \hat{\Psi}_2$ are estimated.

Several methods for selecting starting values for means and mixing proportions were evaluated. In all cases examined, convergence to the global maximum was obtained by choosing initial values from the empirical distribution of lengths of stay. For example, if a mixture of two distributions was being fit, starting values for the means were the 25th and 75th percentile length of stay. Starting values for the mixture proportions were set equal. Typically, the EM algorithm converged in 300 to 600 iterations.

The next step is to assess the equality of means of the Poisson distributions. The first step is to generate confidence regions around $\lambda_1, \dots, \lambda_{C_1}$ (the means of the ICD-9 activity). Confidence regions are established based on the bootstrap methodology (Efron and Tibshirani, 1993). In each of 1,000 bootstrap samples of the original patients, the model of C_2 mixtures is fit (to ensure rapid convergence, starting values are set as the fitted parameters to the original patients). Secondly, each mean based on the ICD-10 patients is assessed to determine whether it lies within any confidence region of the means based on ICD-9 records. In other words, for each $\lambda_c, c \in \{1, \dots, C_2\}$ assess the following:

- if $\lambda_c \in \lambda_1, \dots, \lambda_{C_1}$, the ICD-9 patient cost records corresponding to the ICD-10-based means are used to generate PAC-10;

- if $\lambda_c \notin \lambda_1, \dots, \lambda_{C_1}$, the ICD-9 patient cost records corresponding to the ICD-10-based means are not used to generate PAC-10.

For $\lambda_1, \dots, \lambda_{C_2}$ that do not correspond to ICD-9 patient cost records, patient costs are simulated using a per diem cost curve generated for each MCC (also medical and surgical partitionings). Finally, PAC-10 cost weights are generated using actual and simulated cost records.

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