HIMJ: Reviewed articles

A preliminary analysis of differences in coded data from Australia and Maryland

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Abstract
Hospital discharge data from Maryland in the United States have many more diagnosis and procedure codes compared with coded data from Australia. In order to investigate the source of these additional codes, we analysed 4000 records from each country. There were few differences in the two samples for age, sex or number of deaths. For procedures, an important source of difference was that Maryland coders used many more diagnostic and non-surgical codes compared with Australian coders. Despite significant differences for many of the disease categories, it was not possible to learn many lessons from the Maryland data because nearly half of these codes were not related to the categories we selected for the study. For diagnoses, further work is needed to understand the differences in the number of codes used in the two countries.

Keywords: classification; data collection; Diagnosis-Related Group; hospital records

Introduction

Studies of the comprehensiveness of disease and procedure coding have identified marked under-coding in acute hospital discharge data from Australia compared with data from the United States (US) (Reid et al. 2000a; Reid et al. 1991). A marked difference between Australia and Maryland was noted for the casemix-adjusted average number of codes per case (excluding day cases). For diagnoses the average was 2.44 for Australia, compared with 3.46 for Maryland; and for procedures the average was 0.95 and 1.65 for Australia and Maryland, respectively (Reid et al. 2000a). There is a clear link between the comprehensiveness of the coding and the performance of acute hospital casemix systems (Freeman 1991; Reid et al. 1991; Reid et al. 2000b). The Australian National Diagnosis Related Groups (AN-DRGs) performed better (as measured by R^2) using data from Maryland than by using local data (Reid et al. 2000a). The Maryland data also performed better than Australian data using the All Patient Refined DRGs (APR-DRGs), which make better use of the secondary diagnosis codes to define more DRGs on the basis of complications and comorbidities. Thus, it is reasonable to conclude that the richness of the secondary diagnosis data is responsible for much of the improved performance (Reid et al. 2000a). The additional codes in the Maryland data improved the ability of the DRGs to explain the variation in length of stay in the data. This improved performance provides clear evidence that the additional codes in the Maryland data reflect the illnesses of patients and are not simply the result of the use of unnecessary or unjustified codes (so called

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over-coding).

Data from Maryland have been used widely for comparisons of grouper performance and other casemix research because of their high quality and ready availability. The use of the data for hospital payment purposes since the early 1980s is a likely reason for the high quality. Coders in the US have had more time to adapt and make improvements in the quality of their data. The introduction of casemix-based payment systems in some States of Australia from 1993 has increased the attention given to coded data quality. It should be noted that this process had only just begun for the data used in the study reported here. For example, at that time there were no national coding standards. However, a large difference in the number of codes in the two data sets remains.

The aim of this study was to compare the data from Australia and Maryland to identify specific diagnostic and surgical procedure categories where there were significant differences between the two countries. Age, sex and number of deaths were also compared to assess whether differences in these characteristics explained the differences in the number of codes used. It might be argued that the patients in Maryland were older and sicker than in Australia and hence required more secondary diagnosis and procedure codes.

Data and methods

The Commonwealth Department of Health and Aged Care provided the Australian data for use in a previous study (Reid et al. 2000b). The data were limited to acute cases from acute hospitals, and included separations coded in the 1993-1994 financial year from all public and private hospitals in Australia, excluding data from private hospitals in Victoria and the Northern Territory. The Maryland data, including separations for the 1993 calendar year, were obtained for use in a previous study (Aisbett & Palmer 1994). Both the Maryland and Australian data were assigned to AN-DRGs version 3.0. The data for each patient included age, sex, mode of separation, and the diagnoses and procedures coded using ICD-9-CM.

The number of codes allowed in the data collection systems of the Australian States varied from 5 to 15 for diagnoses and 4 to 12 for procedures. Details of the allowable numbers of codes for each of the States are available elsewhere (Reid et al. 2000a). The Maryland collection allowed up to 15 diagnoses and 15 procedure codes.

The objectives of the study required the analysis of coding differences across a broad range of body systems and for both medical and surgical AN-DRGs. Thus, the major diagnostic categories (MDCs) selected for study were MDC 5 (cardiovascular system), 6 (digestive system), 7 (hepatobiliary system), 8 (musculoskeletal system) and 9 (skin and breast). These MDCs covered 34% of patients treated in Australian hospitals for 1993/94 (Commonwealth of Australia, 1996). It was decided that these MDCs were sufficient for this preliminary work.

In addition to the breadth of their clinical coverage, the study MDCs were selected because they included several AN-DRGs with sufficiently large numbers of separations to support the analysis. Forty AN-DRGs were selected for study. Four from the medical and four from the surgical part of each MDC. Two selection criteria were used; each DRG had a minimum of 100 cases, and the average number of diagnosis codes in the Maryland data was at least 1.5 times greater than for the Australian data. About a third of the study AN-DRGs used secondary diagnoses to define the presence of complications and comorbidities (see Appendix A). For each data set, 100 cases were randomly selected from each DRG (800 cases in each MDC). Overall there were 8,000 cases. We did not attempt to determine the State of origin of each case. Therefore, results were not produced for each State separately. In the Australian data there were 10,532 secondary diagnosis codes, an average of 2.6 per record. This compared with 18,855 in the Maryland data, an average of 4.7 secondary diagnosis codes. There were 2,868 procedure codes in the Australian data set (average of 0.7), compared with 6,408 (average of 1.6) in the Maryland data.

All secondary diagnoses were included regardless of whether they were considered a complication or comorbidity by the DRG system. In this system some secondary diagnoses are excluded from consideration as complications and comorbidities because of their close relationship to the principal diagnosis. These exclusion rules were ignored.

One problem was that the secondary diagnosis codes could come from any of the 18 chapters in ICD-9-CM. To make the analysis more manageable and focus on the most important differences, the secondary diagnosis codes and all the procedure codes for each case were categorised as listed in Table 1. For diseases, the categories were based on the major body systems that were likely to include the comorbidities and complications for the study MDCs and other illnesses that might extend the length of stay, such as respiratory and infectious diseases. An 'other diagnoses' category included all remaining codes. Thus, this residual category was clinically diverse. A check of the data showed that no code in the 'other' category accounted for more than 7.5% of all codes in this category. Combined, the five most frequently occurring codes in the 'other' category accounted for only 15.4% of all codes in the category. For procedures a simple division into surgical and non-surgical codes was considered sufficient.

Microsoft Access was used to count the number of codes for each category. We used t-tests to compare the mean age for each MDC for each country. Chi-square tests were used to determine the significance of any differences in the gender distribution and the proportion of deaths in the two countries. To identify differences in the types of secondary diagnosis and procedure codes, chi-square tests were used to determine whether Australia and Maryland were equally likely to allocate codes to each of the code categories. The significance level was set at $p<0.05$.

Results

The numbers of secondary diagnosis and procedure codes for each category, and the proportion of codes to the total number of diagnosis (or procedure) codes, are set out in Table 2 for each data set. There was a statistically significant difference between the two countries for the proportion of codes in the diagnosis and procedure categories.

Table 3 and Table 4 give the numbers and percentages for the medical and surgical AN-DRGs in each MDC separately. At the MDC level there is a statistically significant difference between the two countries for all the diagnosis and procedure categories.

For both the medical and the surgical AN-DRGs the Maryland data contained more codes in the 'other diagnoses' category than the Australian data (Table 2); 45% versus 32% for the medical and 41% versus 30% for the surgical AN-DRGs. Thus, the code categories chosen on theoretical grounds were less useful in describing the types of secondary diagnoses in the Maryland data than for the Australian data.

In the majority of MDCs, there was no difference in the Australian and Maryland patient characteristics of age, sex and number of deaths. Australian patients were older than in Maryland for the medical AN-DRGs in MDC 5 (68.5 versus 65.8 years; $t=2.33$, $df=798$, $p<0.05$) and for the surgical AN-DRGs in MDC 9 (60 versus 55.8 years; $t=2.68$, $df=798$, $p<0.05$). The sex distribution for surgical AN-DRGs in MDC 7 showed that the Maryland data had a greater proportion of men (56%) than the Australian data (47%; $chi^2=6.48$, $df=1$, $p<0.05$). These minor differences did not support the argument that the patients in Maryland are older and sicker, and therefore require more codes, than in Australia.

Discussion

Despite the much larger number of secondary diagnosis codes in the Maryland data, the Australian data contained a greater proportion of codes for most of the selected code categories. At first, this appears to be something of a paradox. However, given the much greater number of codes being used for each case in Maryland, it is not surprising that these codes are more widely spread across the chapters of ICD-9-CM than in the Australian data. As mentioned above, the Maryland data gave consistently better results for DRG system performance than the Australian data. Therefore, we had hoped to draw some lessons from the Maryland data about the reporting of secondary diagnoses that could be applied here. However, we were unable to do so because of the limitations of our categories.

Some differences in coding policies between the two countries were identified; however, where this was the case, it resulted in *more* rather than *fewer* codes in the Australian data. For infectious disorders it was common to find only one code to describe the infection in the Maryland data, but the Australian data included an additional code to identify the causative organism. In addition, Australian coders made more use of V codes to describe factors in the patient’s profile that were not diseases.

The large number of procedure codes used in the Maryland data was also due to a difference in coding policy. The Maryland data included diagnostic and non-surgical codes that are recommended as not for use in Australian coding standards

(National Centre for Classification in Health 1998). Common examples were blood transfusion (99.02), injection of antibiotic (99.21) and diagnostic ultrasound (88.7x). These diagnostic and non-surgical codes were presumably recorded in Maryland to reflect the costs involved in treating the case, even though these codes do not impact on DRG allocation.

There were no differences in the patient characteristics that could explain the differences in the number of diagnosis codes used.

As noted in earlier studies where these data have been used, other differences between the two data sets may have influenced the results (Palmer et al. 1997). These include the number of coding errors that affect DRG assignment as well as differences between the Australian and Maryland hospital systems. The Australian data were drawn from a much larger number of hospitals (approximately 1,000, compared with 56 from Maryland). However, it is unclear how this would have influenced the results. Further, the Australian data include day stay cases that in Maryland are not regarded as admissions.

As mentioned above, the Maryland data allowed more codes to be entered than was possible for most Australian States. The capacity of the data collection system may have influenced the number of codes used.

The results of the study cannot be generalised to all AN-DRGs because only small numbers of AN-DRGs were included. The study was also limited by the criteria used to select the AN-DRGs. However, the criteria were justified by the need to focus on the AN-DRGs where there were large differences in the number of codes used in the two data sets, and the need to have sufficient cases for analysis. We did not have access to the original medical records and it was not possible to determine if the codes were justified by the documentation in the records.

The study used data that are now rather old. We would argue that it was still useful to undertake the research because it was a low-cost preliminary analysis. Similar comparisons will be much more difficult in future because of the implementation of ICD-10-AM in Australia from 1998. The US has not yet announced the implementation date for its modification of ICD-10. Comparisons between ICD-10-AM and ICD-9-CM regarding the number of codes used will pose many technical difficulties because of the changes in ICD-10-AM. Improvements have been noted elsewhere in the comprehensiveness of coding and the number of diagnoses and procedures allowed in Australia since the data used for this study were coded (Reid et al. 2000a).

Conclusion

This preliminary study was able to give some insights into the differences in the comprehensiveness of the coding in the two countries. It was clear that the differences were not due to differences in the populations. Also, given the better performance of the Maryland data for use in DRGs, it was clear that over-coding of diseases was not a likely reason for the differences. Some specific differences in coding practices were detected, but, with the exception of the coding of non-surgical procedures, these policies produced extra codes in the Australian data, and were not helpful in explaining why Maryland used more codes overall. The large proportion of codes assigned to the 'other diagnoses' category limited the descriptive potential of the study for the Maryland data.

A larger-scale and more specific analysis of the differences in secondary diagnoses is needed to discover the types of diagnoses that are being overlooked in the Australian context. It will be necessary to take account of the codes that contributed to the assignment of the DRG to the complication and comorbidity DRGs, and the codes that are excluded under the definition of these DRGs.

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1: Coding categories and their ICD-9-CM codes

Category	ICD-9-CM code range
Infectious disorders	001–139.9
Neoplasm	140–239.9
Circulatory	390–459.9
Respiratory	460–519.9
GIT disorders	520–579.9
Musculoskeletal	710–739.9
Injury	800–957.9
Poisoning & complications	958–999.9
V codes	V01–V82.9
Other	240–389.9 580–709.9 740–799.9 E800–E999 M800–M997
Surgical procedures	01–86.99
Diagnostic & non-surgical procedures	87–99.99

Back to text

2: "Number (%) of secondary diagnosis and procedure codes by category," Australian 1993/94 and Maryland 1993 data

	Medical AN-DRGs	
	Australia* Number (%)	Maryland Number (%)
Diagnosis code category		
Infectious diseases	373 (7.0)	493 (4.9)
Neoplasm	277 (5.2)	339 (3.4)
Circulatory	1307 (24.6)	2301 (23.1)
Respiratory	346 (6.5)	544 (5.5)
GIT disorders	566 (10.7)	903 (9.1)
Musculoskeletal	250 (4.7)	329 (3.3)
Injury	53 (1.0)	68 (0.7)
Poisoning & complications	62 (1.2)	84 (0.8)
V codes	373 (7.0)	428 (4.3)
Other diagnoses	1704 (32.1)	4474 (44.9)
Total secondary diagnosis codes	5311 (100)	9963 (100)
Procedure code category		
Surgical	157 (44.0)	375 (21.5)
Diagnostic	200 (56.0)	1366 (78.5)
Total procedure codes	357 (100)	1741 (100)
	Surgical AN-DRGs	
	Australia* Number (%)	Maryland Number (%)
Diagnosis code category		
Infectious diseases	425 (8.1)	379 (4.3)
Neoplasm	205 (3.9)	212 (2.4)
Circulatory	1031 (19.7)	1937 (21.8)
Respiratory	353 (6.8)	567 (6.4)
GIT disorders	583 (11.2)	739 (8.3)
Musculoskeletal	187 (3.6)	312 (3.5)
Injury	81 (1.6)	201 (2.3)
Poisoning & complications	546 (10.5)	594 (6.7)
V codes	249 (4.8)	274 (3.1)
Other diagnoses	1561 (29.9)	3677 (41.4)
Total secondary diagnosis codes	5221 (100)	8892 (100)
Procedure code category		
Surgical	1867 (74.4)	2695 (57.7)
Diagnostic	644 (25.6)	1972 (42.3)

Total procedure codes	2511 (100)	4667 (100)

* Difference in the proportion of codes in the diagnosis and procedure categories is statistically significant (p<0.05)

Back to text

3: Number (%) of secondary diagnosis and procedure codes by category, 4 medical AN-DRGs in each MDC, Australian 1993/94 and Maryland 1993 data

	Circulatory system		Digestive system	
	Australia* Number (%)	Maryland Number (%)	Australia* Number (%)	Maryland Number (%)
Diagnosis code category				
Infectious diseases	76 (5.5)	110 (4.8)	16 (2.3)	40 (2.5)
Neoplasm	21 (1.5)	19 (0.8)	102 (14.4)	129 (8.0)
Circulatory	596 (42.8)	808 (35.4)	126 (17.8)	313 (19.3)
Respiratory	108 (7.7)	165 (7.2)	45 (6.4)	94 (5.8)
GIT disorders	63 (4.5)	94 (4.1)	142 (20.1)	250 (15.4)
Musculoskeletal	31 (2.2)	59 (2.6)	15 (2.1)	29 (1.8)
Injury	5 (0.4)	11 (0.5)	2 (0.3)	5 (0.3)
Poisoning & complications	18 (1.3)	14 (0.6)	11 (1.6)	8 (0.5)
V codes	87 (6.2)	119 (5.2)	78 (11.0)	79 (4.9)
Other diagnoses	389 (27.9)	886 (38.8)	171 (24.2)	672 (41.5)
Total secondary diagnosis codes	1394 (100)	2285 (100)	708 (100)	1619 (100)
Procedure code category				
Surgical	30 (42.9)	69 (21.3)	30 (61.2)	50 (16.9)
Diagnostic	40 (57.1)	255 (78.7)	19 (38.8)	245 (83.1)
Total procedure codes	70 (100)	324 (100)	49 (100)	295 (100)

	Hepatobiliary system		Musculoskeletal system	
	Australia* Number (%)	Maryland Number (%)	Australia* Number (%)	Maryland Number (%)
Diagnosis code category				
Infectious diseases	91 (6.6)	78 (3.3)	70 (8.5)	102 (5.7)
Neoplasm	118 (8.5)	135 (5.8)	10 (1.2)	19 (1.1)
Circulatory	220 (15.8)	380 (16.3)	133 (16.1)	366 (20.6)
Respiratory	95 (6.8)	142 (6.1)	48 (5.8)	72 (4.0)
GIT disorders	280 (20.2)	404 (17.3)	46 (5.6)	86 (4.8)
Musculoskeletal	25 (1.8)	25 (1.1)	106 (12.9)	139 (7.8)
Injury	7 (0.5)	2 (0.1)	26 (3.2)	38 (2.1)
Poisoning & complications	11 (0.8)	17 (0.7)	14 (1.7)	20 (1.1)
V codes	64 (4.6)	83 (3.6)	78 (9.5)	60 (3.4)
Other diagnoses	478 (34.4)	1071 (45.8)	293 (35.6)	876 (49.3)
Total secondary diagnosis codes	1389 (100)	2337 (100)	824 (100)	1778 (100)
Procedure code category				
Surgical	58 (43.6)	151 (27.1)	31 (37.3)	62 (18.7)
Diagnostic	75 (56.4)	407 (72.9)	52 (62.7)	270 (81.3)
Total procedure codes	133 (100)	558 (100)	83 (100)	332 (100)

	Skin, subcutaneous tissue and breast	
	Australia* Number (%)	Maryland Number (%)
Diagnosis code category		
Infectious diseases	120 (12.0)	163 (8.4)
Neoplasm	26 (2.6)	37 (1.9)
Circulatory	232 (23.3)	434 (22.3)
Respiratory	50 (5.0)	71 (3.7)
GIT disorders	35 (3.5)	69 (3.5)
Musculoskeletal	73 (7.3)	77 (4.0)

Injury	13 (1.3)	12 (0.6)
Poisoning & complications	8 (0.8)	25 (1.3)
V codes	66 (6.6)	87 (4.5)
Other diagnoses	373 (37.4)	969 (49.8)
Total secondary diagnosis codes	996 (100)	1944 (100)
Procedure code category		
Surgical	8 (36.4)	43 (18.5)
Diagnostic	14 (63.6)	189 (81.5)
Total procedure codes	22 (100)	232 (100)

* Difference in the proportion of codes in the diagnosis and procedure categories is statistically significant ($p<0.05$)

Back to text

4: Number (%) of secondary diagnosis and procedure codes by category, 4 surgical AN-DRGs in each MDC, Australian 1993/94 and Maryland 1993 data

	Circulatory system		Digestive system	
	Australia* Number (%)	Maryland Number (%)	Australia* Number (%)	Maryland Number (%)
Diagnosis code category				
Infectious diseases	46 (5.5)	41 (2.6)	63 (6.3)	44 (2.8)
Neoplasm	7 (0.8)	6 (0.4)	93 (9.2)	102 (6.5)
Circulatory	296 (35.1)	657 (41.7)	139 (13.8)	268 (17.0)
Respiratory	31 (3.7)	65 (4.1)	112 (11.1)	161 (10.2)
GIT disorders	12 (1.4)	38 (2.4)	173 (17.2)	212 (13.5)
Musculoskeletal	33 (3.9)	61 (3.9)	25 (2.5)	20 (1.3)
Injury	7 (0.8)	11 (0.7)	3 (0.3)	29 (1.8)
Poisoning & complications	45 (5.3)	53 (3.4)	151 (15.0)	149 (9.5)
V codes	52 (6.2)	63 (4.0)	30 (3.0)	42 (2.7)
Other diagnoses	315 (37.3)	580 (36.8)	218 (21.6)	549 (34.8)
Total secondary diagnosis codes	844 (100)	1575 (100)	1007 (100)	1576 (100)
Procedure code category				
Surgical	278 (75.1)	401 (61.1)	380 (77.1)	596 (62.0)
Diagnostic	92 (24.9)	255 (38.9)	113 (22.9)	366 (38.0)
Total procedure codes	370 (100)	656 (100)	493 (100)	962 (100)
	Hepatobiliary system		**Musculoskeletal system**	
	Australia* Number (%)	Maryland Number (%)	Australia* Number (%)	Maryland Number (%)
Diagnosis code category				
Infectious diseases	124 (9.0)	84 (4.2)	71 (6.6)	51 (2.6)
Neoplasm	47 (3.4)	64 (3.2)	16 (1.5)	12 (0.6)
Circulatory	180 (13.1)	256 (12.9)	214 (19.9)	410 (21.3)
Respiratory	124 (9.0)	150 (7.5)	60 (5.6)	120 (6.2)
GIT disorders	347 (25.2)	384 (19.3)	32 (3.0)	46 (2.4)
Musculoskeletal	14 (1.0)	18 (0.9)	69 (6.4)	128 (6.6)
Injury	11 (0.8)	67 (3.4)	48 (4.5)	46 (2.4)
Poisoning & complications	179 (13.0)	168 (8.4)	119 (11.1)	157 (8.1)
V codes	57 (4.1)	58 (2.9)	69 (6.4)	58 (3.0)
Other diagnoses	296 (21.5)	743 (373.3)	375 (34.9)	900 (46.7)
Total secondary diagnosis codes	1379 (100)	1992 (100)	1073 (100)	1928 (100)
Procedure code category				
Surgical	643 (68.8)	795 (53.6)	234 (70.1)	355 (45.5)
Diagnostic	292 (31.2)	689 (46.4)	100 (29.9)	425 (54.5)
Total procedure codes	935 (100)	1484 (100)	334 (100)	780 (100)

	Skin, subcutaneous tissue and breast	
	Australia* Number (%)	Maryland Number (%)
Diagnosis code category		
Infectious diseases	121 (13.2)	159 (8.7)
Neoplasm	42 (4.6)	28 (1.5)
Circulatory	202 (22.0)	346 (19.0)
Respiratory	26 (2.8)	71 (3.9)
GIT disorders	19 (2.1)	59 (3.2)
Musculoskeletal	46 (5.0)	85 (4.7)
Injury	12 (1.3)	48 (2.6)
Poisoning & complications	52 (5.7)	67 (3.7)
V codes	41 (4.5)	53 (2.9)
Other diagnoses	357 (38.9)	905 (49.7)
Total secondary diagnosis codes	918 (100)	1821 (100)
Procedure code category		
Surgical	332 (87.6)	548 (69.8)
Diagnostic	47 (12.4)	237 (30.2)
Total procedure codes	379 (100)	785 (100)

* Difference in the proportion of codes in the diagnosis and procedure categories is statistically significant ($p<0.05$)

Back to text

Appendix A: AN-DRGs included in the study

MDC 5 Diseases and disorders of the circulatory system

Surgical
234 Upper limb and toe amputation for circulatory system disorders
236 Cardiac pacemaker implantation
239 Vein ligation and stripping
297 Trans-vascular percutaneous cardiac intervention

Medical
251 Infective endocarditis
252 Heart failure and shock
266 Major arrhythmia and cardiac arrest with complication
269 Unstable angina w CC

MDC 6 Diseases and disorders of the digestive system

Surgical
300 Stomach, oesophageal & duodenal procedures w major CC
301 Stomach, oesophageal & duodenal procedures w non-major CC
314 Appendectomy w/o complicated principal diagnosis
320 Inguinal & femoral hernia procedures age >9

Medical
334 Other colonoscopy w CC
336 Digestive malignancy
338 GI haemorrhage age <65 w/o CC
341 Uncomplicated peptic ulcer

MDC 7 Diseases and disorders of the hepatobiliary system

Medical
369 Hepatobiliary diagnostic procedure for non-malignancy
371 Cirrhosis & alcoholic hepatitis w CC
376 Disorders of liver except malignancy cirrhosis & alcoholic hepatitis w CC
382 Malignancy of hepatobiliary system, pancreas age >69 W CC

Surgical
359 Pancreas, liver & shunt procedures w major CC
362 Biliary tract procedure except only cholecystectomy w or w/o c.d.e. w major CC
367 Cholecystectomy w/o c.d.e.
389 Disorders of pancreas except malignancy age >54 w CC

MDC 8 Diseases and disorders of the musculoskeletal system and connective tissue

Medical
439 Non-major fractures of femur
444 Osteomyelitis age >64 or w CC
448 Connective tissue disorders age >64 or w CC
459 Bone diseases & specific arthropathies age <65

Surgical
404 Hip replacement w CC
409 Hip & femur procedures except major joint age >54 w/o CC
411 Amputation
413 Spinal fusion w scoliosis

MDC 9 Diseases and disorders of the skin, subcutaneous tissue and breast

Medical
489 Cellulitis age >59 w CC
506 Skin ulcers age >64
507 Skin ulcers age <65
509 Major skin disorders age 10-44 or age >44 w/o CC

Surgical
484 Other skin, subcutaneous tissue & breast procedures
500 lower limb w skin graft/flap repair w ulcer/cellulitis w CC
502 Lower limb w other OR procedure w ulcer/cellulitis
505 Other skin graft &/or debridement procedures

Back to text