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Enhancing Medicare's Hospital-Acquired Conditions Policy to Encompass Readmissions

Peter D. McNair & Harold S. Luft
Palo Alto Medical Foundation Research Institute

Background: The current Medicare policy of non-payment to hospitals for Hospital-Acquired Conditions (HAC) seeks to avoid payment for preventable complications identified within a single admission. The financial impact (\$1 million-\$50 million/yr) underestimates the true financial impact of HACs when readmissions are taken into account.

Objective: Define and quantify acute inpatient readmissions arising directly from, or completing the definition of, the current HACs.

Research Design: Observational study.

Subjects: All non-federal inpatient admissions to California hospitals, July 2006 to June 2007 with a recorded Social Security number.

Measures: Readmission to acute care within 1 day for acute complications of poor glycemic control; 7 days for iatrogenic air emboli, incompatible blood transfusions, catheter-associated urinary tract infections and vascular catheter-associated infections; 30 days for deep vein thromboses or pulmonary emboli following hip or knee replacement surgery; and 183 days for foreign objects retained after surgery, mediastinitis following coronary artery bypass grafts, injuries sustained during inpatient care, infections following specific joint or bariatric surgery procedures, and pressure ulcers stages III & IV.

Results: An additional estimated \$103 million in payments would be withheld if Medicare expands the policy to include non-payment for HAC related readmissions. The majority (90%) of this impact involves mediastinitis, post-orthopedic surgery infection, or fall related injury.

Conclusions: Limiting the current HAC policy focus to complications identified during the index admission omits consideration of many complications only identified in a subsequent admission. Non-payment for HAC-related readmissions would enhance incentives for prevention by increasing the frequency with which hospitals are held accountable for HACs.

Keywords: Funding, Inpatient, Hospital-Acquired Conditions, Readmissions

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Introduction

Containing costs and improving quality are priorities for healthcare systems; reducing avoidable complications helps achieve both goals. The Centers for Medicare and Medicaid Services (CMS) have addressed this with a (non-payment for) Hospital-Acquired Conditions (HAC) policy (U.S. Department of Health and Human Services, 2008). The policy refuses payment for 10 complications of care (see Exhibit 1) that are considered preventable. Although the introduction of the HAC policy attracted significant media attention, CMS estimates the national financial impact of the HAC policy to be small: \$20 million in 2008–09 and \$50 million in 2009–10 (U.S. Department of Health and Human Services, 2008). An independent study estimates the impact at \$1.1 million to \$2.7 million (McNair, Luft, & Bindman, 2009). These figures are low, not because HACs are so rare, but because of the way the HAC policy is designed and implemented.

The current HAC policy reduces CMS payments by deleting consideration of HAC diagnosis and procedure codes from payment calculations. For example, payment for an admission that included the administration of an incompatible blood transfusion to a patient would not be allowed to include consideration of the HAC code (ICD-9 diagnosis code '999.6—ABO incompatibility reaction due to transfusion of blood or blood products') although other diagnosis and procedure codes, including sequelae of the incompatible transfusion, could be considered. As McNair et al. (2009) demonstrated, for many admissions with a HAC, the payment level is not altered by eliminating the code specifically associated with the HAC.

In this paper, we address the HAC policy that limits consideration to complications that arise and are identified within a single hospital admission. This implicitly assumes the only complications that matter arise, are detected, and resolved during the admission in which they occur. Some clear complications, however, are not apparent until after discharge. One challenge in using readmissions is that they occur frequently in the Medicare population even without clear evidence of a hospital-based quality problem (Jencks, Williams, & Coleman, 2009). Many readmissions may be prevented with optimal care, but not all are clearly complications of the hospital admission (Friedman & Basu, 2004). Although studies have addressed potentially preventable complications of care (Fuller, McCullough, Bao, & Averill, 2009) and associated readmissions (Averill et al., 2009), to date, neither transfers and readmissions to treat the CMS suite of HACs, nor the direct consequences of these HACs, have been specifically investigated. The impact of these readmissions, however, has been flagged as a priority by the Medicare Payment Advisory Committee (MedPAC, 2008).

This study examines acute inpatient readmissions that plausibly arise directly from, or complete the definition of, HACs in California between 1 July 2006 and 30 June 2007, with findings extrapolated to estimate the nationwide impact. Strengths, limitations, policy implications and policy options arising from these analyses are also discussed.

Methods

The California Office of Statewide Health Planning and Development (OSHPD), Center for the Protection of Human Subjects, granted permission for the use of the 2006 and 2007 Patient Discharge Datasets (PDD). The PDD includes a record for every non-federal hospital discharge in California. Each record includes demographic data, any hospital charge, up to 25 diagnosis and 21 procedure codes, and admission and discharge information. The PDD is one of the few datasets to have historically included a Present on Admission (POA) indicator for each diagnosis code, a field necessary for defining the Medicare HACs. We use an OSHPD provided Social Security number-based record linkage identifier to search the dataset for (re)admissions and transfers that are plausibly a direct consequence of, or themselves constitute, HACs (e.g., an admission that includes a coronary artery bypass procedure and a subsequent admission for mediastinitis). OSHPD applies several hundred audit rules to ensure the integrity of the PDD and the associated record linkage numbers (RLNs).

Medicare's policy for (non-payment for) HACs adjusts the Inpatient Prospective Payment System algorithm by removing diagnosis codes for ten specific HACs that arise during an admission. In this study, the search strategy for each of the HACs attempts to increase the time over which the HAC can be detected with little, if any, change to the codes defining the HAC. An admission is considered a HAC associated readmission if the HAC is the principal diagnosis (i.e., after consideration, determined to be the principal reason for (re)admission). In the case of retained foreign body, a readmission involving the removal of a retained object following surgery may also be flagged as a HAC associated readmission.

Averill et al., (2009) identified the importance of readmission windows (the time frame over which a condition-specific readmission could plausibly arise as the result of a previous admission) in ensuring that readmissions are a likely consequence of an earlier admission. The authors investigated readmission windows and exclusions, and used OSHPD data to determine window-specific readmission rates and relevance to the initial admission (e.g., ensuring whether a diagnosis of mediastinitis was associated with a previous episode of cardiac surgery or if it was community acquired). The windows and exclusions were reviewed by a panel of clinicians. Readmission windows were set as one day for acute complications of poor (inpatient) glycemic control; seven days for air emboli (arising from a medical or surgical procedure); incompatible blood transfusion, catheter-associated urinary tract infections and vascular catheter-associated infections; 30 days for deep vein thromboses or pulmonary emboli (DVT/PE) following hip or knee joint replacement surgery; and 183 days for foreign object retained after surgery, mediastinitis (infection of the sternal bone and /or surrounding tissues) following coronary artery bypass graft surgery, fractures and other physical injuries sustained during inpatient care, infections arising from specific (spine, neck, shoulder or elbow) orthopedic joint procedures or bariatric procedures, and pressure (decubitus) ulcers stages III & IV (U.S. Department of Health and Human Services, 2008). Readmissions from skilled nursing facilities are excluded for

DVT/PE and pressure ulcer. Patients age < 1 year are excluded for incompatible blood transfusion (to avoid confusion with mother-baby Rh incompatibility). The foreign object retained after surgery definition is limited to cases with a secondary diagnosis of foreign object retained after surgery accompanied by a principal diagnosis of sepsis or a principal procedure for removal of a foreign body.

The 2006 codes only allow an outer bound estimate for vascular catheter infection and pressure ulcer (stages III and IV). Specifically, the 2006 code to which vascular catheter-associated infection is assigned also captures all instances of infection, sepsis, or septicemia associated with infusion, injection, transfusion, or vaccination as a complication of care; the 2006 code to which pressure ulcer stages III & IV are assigned captures all pressure ulcers as a complication of care, irrespective of their stage. The 2008 ICD-9 codes accurately define all HACs covered by the policy.

The study is limited to acute inpatient (re)admissions (including transfers) following an acute admission. As admission-specific cost data is not collected, an estimated cost for each episode of care is calculated from the charge and the hospital-specific cost-to-charge ratio. Medicare payment is estimated using publicly available diagnosis-related group payment weights, wage, Indirect Medical Education (IME) and Disproportionate Share Hospital (DSH) indices, and other factors (U.S. Department of Health and Human Services, 2006). Payment estimates also include adjustments for remote hospitals, early transfers, and cost outlier calculations that are described elsewhere (MedPAC, 2007). Admissions where the estimated cost or payment are likely to be invalid (< \$100) are excluded.

A study of within admission HAC incidence by McNair et al., (2009) shows little difference between California and data representative of the remainder of the US. The nationwide financial impact is extrapolated assuming that the incidence of readmission for HAC in California reflects the incidence for the remainder of the United States. The impact is extrapolated by dividing the California estimates by the proportion of adults with valid RLNs (91% for all cases; 97.7% for Medicare), then by multiplying the California results by the 2006 U.S. population/California population; (298,444,215/36,457,549). The Nationwide extrapolation factor is 8.38 (8.99 for Medicare).

Results

There are 3,997,182 records in the 2006 PDD and 4,012,774 in the 2007 PDD (8,009,956 records in total). Record linkage numbers (i.e., records with a valid Social Security number) are available for 76.3% of all discharges, 13.6% for children age 14 years or younger and 97.7% for adults age 65 years or older. There are 4,007,791 records for discharges in the period 1 July 2006 to 30 June 2007.

The California-wide results are summarized in Exhibit 1; the Medicare only results are summarized in Exhibit 2. Within the HAC-specific readmission windows, only four index cases

had multiple readmissions: All were for mediastinitis following coronary artery bypass graft; three of these patients were readmitted twice and one patient was readmitted three times.

Exhibit 1: Readmissions Arising From, or Constituting, a Hospital-Acquired Condition, California, 1 July 2006 to 30 June 2007.

Hospital-Acquired Condition	Cases that are likely readmissions	Medicare equivalent payments ⁵ (\$ 000)	Estimated total cost ⁶ (\$ 000)	Readmissions to another acute hospital
Foreign objects retained after surgery	87	\$1,476	\$3,075	1
Air emboli	5	\$43	\$94	0
Incompatible blood transfusions	0	\$0	\$0	0
Infusion associated infections ¹	6	\$154	\$247	2
Complications of diabetes	32	\$180	\$204	29
Catheter-associated UTIs	0	\$0	\$0	0
Mediastinitis after CABG	46 ²	\$1,741	\$4,407	14
In-hospital falls and traumas	119	\$1,892	\$4,453	60
Infections after orthopedic surgery	1,073 ³	\$19,641	\$48,751	262
Infections after bariatric surgery	0	\$0	\$0	0
DVTs or pulmonary emboli after hip or knee replacement	6	\$28	\$40	4
Pressure ulcers—all stages ⁴	37	\$612	\$1,604	24
Total	1,411	25,769	62,874	396

¹Includes all instances of infection, sepsis or septicemia associated with infusion, injection, transfusion, or vaccination as a complication of care.

²Includes two cases where the admission is for mediastinitis and a subsequent CABG procedure is undertaken.

³Sixty cases involve a subsequent orthopedic procedure.

⁴Includes pressure ulcers—all stages.

⁵These are estimates of what Medicare would have paid based on Medicare rules, even though not all these patients are covered by Medicare.

⁶These costs estimates are based on charges reported adjusted by cost to charge ratios for each hospital.

SOURCE: The California Office of Statewide Health Planning and Development, 2006 & 2007 Patient Discharge Datasets.

Exhibit 2: Readmissions Arising From, or Constituting, a Hospital-Acquired Condition, Medicare Recipients Only, California, 1 July 2006 to 30 June 2007.

Hospital-Acquired Condition	Cases impacted by the HAC policy ¹	Cases that are likely readmissions	Medicare equivalent payments (\$ 000)	Estimated total cost (\$ 000)	Readmissions to another acute hospital
Foreign objects retained after surgery	9	21	\$317	\$699	0
Air emboli	0	2	\$17	\$37	0
Incompatible blood transfusions	0	0	\$0	\$0	0
Infusion associated infections ²	7	4	\$109	\$193	1
Complications of diabetes	Unknown	4	\$19	\$29	4
Catheter-associated UTIs	4	0	\$0	\$0	0
Mediastinitis after CABG	0	29^{3}	\$1,212	\$3,021	7
In-hospital falls and traumas	13	92	\$1,496	\$3,415	44
Infections after orthopedic surgery	Unknown	464^4	\$7,754	\$15,508	117
Infections after bariatric surgery	Unknown	0	\$0	\$0	0
DVTs or pulmonary emboli after hip or knee replacement	Unknown	1	\$7 ⁶	\$5 ⁷	1
Pressure ulcers—all stages ⁵	22	30	\$515	\$1,320	23
Total	Unknown	647	11,440	24,222	194

¹2006 California data from: McNair, P. D, Luft, H. S., & Bindman, A. B., (2009). Medicare's policy not to pay for treating hospital-acquired conditions: The impact, *Health Affairs (Millwood)*, 28(5),1485-1493.

SOURCE: The California Office of Statewide Health Planning and Development, 2006 & 2007 Patient Discharge Datasets.

Readmissions Captured by the Current Policy

Seventeen records contain codes for coronary artery bypass graft *and* mediastinitis (the current HAC policy definition). Two of these are readmissions, 1 within 30 days of a previous coronary artery bypass graft procedure, another within 91–183 days of a previous coronary artery bypass graft procedure (i.e., they meet the current HAC definition, but are themselves readmissions following a previous coronary artery bypass graft procedure). Mediastinitis is an important

²Includes all instances of infection, sepsis or septicemia associated with infusion, injection, transfusion, or vaccination as a complication of care.

³Includes two cases where the admission is for mediastinitis and a subsequent CABG procedure is undertaken.

 $^{^4\}mathrm{Twenty}$ cases involve a subsequent orthopedic procedure.

⁵Excludes admissions from skilled nursing facilities.

⁶Based on all case payments.

⁷Based on all case costs.

factor in at least one of these cases. Under the current policy, payment for these 17 (re)admissions would be made by simply excluding the mediastinitis code from payment consideration.

Transfers Are Included in the Readmissions

One hundred and nineteen readmission records (ninety-two for Medicare) contain a principal diagnosis code that is the same as a previous (injury) code arising from an in-hospital fall or trauma for that patient. Eighty-two percent (97/119) of these cases are readmitted on the same day to another acute care facility (i.e., most likely transfers). There are 65 pressure ulcers that arose in initial admissions but are coded as *not* POA following same-day readmissions (most likely transfers).

Orthopedic Infections

Admissions for a spine, neck, shoulder, or elbow joint procedure account for 25.4% (28,021/110,297) of all admissions for joint procedures among the patients in the study. Of the 1,073 readmission records (464 for Medicare) containing a code for surgical site infection following a spine, neck, shoulder, or elbow joint procedure, 60 records (4%; 20 cases for Medicare) involve a subsequent orthopedic procedure. One hundred seventy-five of the one thousand and seventy-three readmitted cases (seventy-four for Medicare) involved infection of an orthopedic prosthesis, probably osteomyelitis.

Nationwide Financial Impact

The estimated nationwide impact of readmissions arising from HACs on hospital *payments* (using Medicare rates) is \$232 million (\$103 million for Medicare patients) with \$565 million in estimated *costs* (\$203 million for Medicare) for hospitals. This can be contrasted with a \$2.7 million reduction in hospital payments for Medicare patients using the same method and data, but applying the HAC policy only to cases in which a HAC is identified during the same admission (McNair et al., 2009).

Discussion

Financial Impact of Including Readmissions in the HAC Policy

The study finds that readmissions that are a consequence of HAC attract annual Medicare payments of \$103 million, around 0.10% of the \$106 billion allocated through IPPS payments for acute inpatient services in 2006. Although 38 times larger than estimates of the projected impact of the current HAC program (\$2.7 million; McNair et al., 2009), it is still a small fraction of the total Medicare budget.

In California, estimated hospital costs exceed Medicare payments by approximately 100%, so hospitals may already to be losing money on readmissions that are a consequence of

HACs.¹ The use of readmissions to identify HACs has differing effects across the 10 HAC categories, so this cost to revenue ratio differs from that found when HAC cases are defined only by the information from the index admission, where estimated costs exceed payments by ~15% (\$102 million/\$88.4 million; McNair et al., 2009).

Averill et al. (2009) have developed a policy regarding (non-payment for) readmissions to treat complications of care, that withholds a proportion of readmission payments equivalent to the potentially preventable component of the readmission. The current HAC policy, however, only includes complications considered to be preventable, so called 'never' events, so there is no justification for withholding less than full payment.

The current policy emits a weak signal; HACs impact Medicare payments so infrequently that the average hospital is likely to have only one HAC related payment modification every six years. Using the readmission data markedly increases the frequency with which true complications are identified, allowing hospitals to develop effective quality improvement programs, rather than treating the complications as random, rare events.

Around eighty percent of the overall impact from the current list of HACs, including readmissions (California only data: \$21.4 million/\$25.8 million; \$9.0 million/\$11.4 million for Medicare), involves orthopedic infection or mediastinitis. Although orthopedic infections can involve other tissues, we expect that most readmission cases involve bone infection which, due to limited vascularization, is slow to both develop and respond to treatment.

An additional 7% (14% for Medicare) of the overall impact involves fractures and injuries resulting from inpatient falls. We applied strict criteria for matching the injury arising from a fall with the readmission. The principal diagnosis (reason) for the readmission must be an exact ICD-9 diagnosis code match for the injury arising from the fall. The readmissions within 6 months associated with fractures and injuries arising from falls are predominantly (82%) same-day readmissions (almost certainly transfers).

Orthopedic infections, mediastinitis following CABG, and fractures and injuries associated with falls account for more than 90% of costs for HAC associated readmissions, so a policy change might just focus on theses three categories.

The Data Need to Improve

Expanding the HAC policy to include patients identified by a readmission is but one aspect of what needs to be done for appropriate incentives to avoid complications. Much more work needs to be done to address underlying issues of data coding and scope. Other authors have

¹Medicare payment relative to hospital costs varies regionally, with multiple interpretations regarding causality (Robinson 2011). The California cost figures may not be generalizable, but the extrapolation of the impact of alternative HAC polices on Medicare is probably reasonable.

²McNair et al., 2009, identified modifications to 55 Medicare payments across 301 California hospitals, an average of 1 in every 6 hospitals or, on average, 1 modification every 6 years.

highlighted gross underreporting of catheter-associated urinary tract infection in routinely collected data despite a previous study showing that 6% of patients with a urinary catheter develop a symptomatic urinary tract infection (Saint, 2000; Zhan et al., 2009). Similarly, we found 391 episodes where a patient with a pressure ulcer was readmitted with a pressure ulcer on the same site that was not coded POA; in 65 cases this was a same-day readmission (i.e., most likely a transfer), likely reflecting inadequate admission examination and/or documentation or "POA" coding errors.

Readmissions for HACs Should Always Trigger a Payment Modification

Preventable HACs (i.e., never events) should be the financial responsibility of the hospital in which they occur.³ Every instance of a HAC that is not community acquired should trigger an *attempt* at payment modification. This could include modification of the payment for the initial admission if that is when the HAC was observed (current policy), or claw-back of payment from the initial hospital for the costs of any (re)admission that is the sequelae of a HAC (our proposed policy). Under the current list of HACs, this includes foreign object retained after surgery, incompatible blood transfusion, air embolism arising from a medical or surgical condition, vascular catheter infection, mediastinitis following coronary artery bypass graft surgery⁴ and infection following orthopedic or bariatric surgery.

Using as an example, foreign object retained after surgery, a diagnosis code flagging the retained object should be reported and subsequently deleted from the funding algorithm, as is the case under the current policy. The incentives for hospitals to neither report the retained foreign body nor its removal are high, and Pronovost et al. (2008) have argued that these complications of care may be inconsistently diagnosed between organizations. Within a single admission, however, inconsistent or non-reporting is almost irrelevant from a funding perspective, as it will rarely impact payment (McNair et al., 2009). In contrast, readmissions specifically for HAC treatment are difficult to disguise. Non-payment for these readmissions will have a larger, albeit still relatively small, direct financial impact.

Unintended Consequences

All policies have potential unintended, and often unwanted, consequences. This modification of the HAC policy is no exception. For example, the appropriateness of not paying for fall-associated injuries in acute care settings has been questioned by Inouye et al., (2009). They contend that mobility is an important component of recovery from acute illness and argue that non-payment for fall-related injury may encourage use of hospital equipment that inhibits

³This should be within HAC specific timeframes to exclude HACs that are likely to be community acquired.

⁴Community acquired mediactinitie is rare. In this study, code ravious of all admissions for mediactinitie within

⁴Community acquired mediastinitis is rare. In this study, code review of all admissions for mediastinitis within six months of CABG found each case to most likely be a complication of CABG surgery.

⁵Where a retained object is removed during a subsequent admission for another reason, the foreign body removal procedure code should also be deleted from the funding algorithm.

patient mobility, leading to additional complications including pressure ulcers. The multidisciplinary approach they recommend, however, will require changes to clinical processes, structures, and staffing patterns. Our HAC policy amendment should encourage hospitals to commit resources to reducing specific preventable complications of care.

Readmission to Another Facility

Thirty percent of Medicare readmissions for HACs (194/647) in California are to a hospital that differs from the index facility. To deal with this, Medicare could notify the index hospital when they receive a claim for a HAC related readmission and subsequently adjust the index hospital payments by the value of the readmission payment.

Likewise, when a patient is readmitted for removal of a foreign object retained after surgery and / or treatment of sequelae (e.g., sepsis), the readmission should be charged to the healthcare provider that left the foreign object (e.g., ambulatory surgery center). Medicare can accommodate this policy; it will be a challenge for private health insurers to negotiate and implement an analogue.

HAC Policy as a Signal

The stated aim of the HAC policy is to avoid payment for HACs. McNair et al., (2009) have shown that the application of the HAC policy has not fully achieved this aim. The estimated nationwide payment impact of this modification to Medicare's HAC policy is \$103 million. A more important role of the HAC policy, however, is as a signal to providers that "never" events should not happen and appropriate process changes should be implemented to eliminate them. Quality improvement efforts cannot be sustained if focused on seemingly random events. By capturing the large fraction of HACs that can only be identified *after* discharge, a new policy can create both the signal and the incentives for improvement.

Correspondence

Peter D. McNair, MPH, MHS Palo Alto Medical Foundation Research Institute, 795 El Camino Real, Palo Alto CA 94301, mcnairp@pamfri.org, Tel: 415-572-9221, Fax: 650-327-8309

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Appendix

Appendix 1: Hospital-Acquired Conditions Included in the 2008 Medicare Policy and Their Defining Codes

HAC	CC/MCC			
	(ICD-9-CM Codes)			
Foreign Object Retained After Surgery	998.4 (CC)			
	998.7 (CC)			
Air Embolism	999.1 (MCC)			
Incompatible blood transfusions	999.6 (CC)			
Pressure Ulcers Stages III & IV	707.23 (MCC)			
	707.24 (MCC)			
Falls and Trauma:	Codes within these ranges on the			
• Fracture	CC/MCC list:			
 Dislocation 	800-829			
 Intracranial Injury 	830-839			
 Crushing Injury 	850-854			
• Burn	925-929			
 Electric Shock 	940-949			
	991-994			
Catheter-Associated Urinary Tract	996.64 (CC)			
Infection (UTI)	Also excludes the following from			
	acting as a CC/MCC:			
	112.2 (CC)			
	590.10 (CC)			
	590.11 (MCC)			
	590.2 (MCC)			
	590.3 (CC)			
	590.80 (CC)			
	590.81 (CC)			
	595.0 (CC)			
	597.0 (CC)			
	599.0 (CC)			
Vascular Catheter-Associated Infections	999.31 (CC)			
Manifestations of Poor Glycemic Control	250.10-250.13 (MCC)			
Diabetic Ketoacidosis•	250.20-250.23 (MCC)			
Nonketotic Hyperosmolar Coma•	251.0 (CC)			
Hypoglycemic Coma•	249.10-249.11 (MCC)			
Secondary Diabetes with Ketoacidosis•	249.20-249.21 (MCC)			
Secondary Diabetes with Hyperosmolarity•	` ,			
Surgical Site Infection, Mediastinitis,	519.2 (MCC)			
Following Coronary Artery Bypass Graft	And one of the following procedure codes:			
(CABG)Ex	36.10-36.19			
(0 /	30110 30117			

Appendix 1 (cont.)

HAC	CC/MCC (ICD-9-CM Codes)			
Surgical Site Infection Following Certain	996.67 (CC)			
Orthopedic Procedures	998.59 (CC)			
• Spine	And one of the following procedure codes:			
 Neck 	81.01-81.08,			
 Shoulder 	81.23-81.24,			
• Elbow	81.31-81.38,			
	81.83,			
	or 81.85			
Surgical Site Infection Following Bariatric	Principal Diagnosis – 278.01			
Surgery for Obesity	998.59 (CC)			
Laparoscopic Gastric Bypass•	And one of the following procedure codes:			
Gastroenterostomy•	44.38, 44.39, or 44.95			
Laparoscopic Gastric Restrictive Surgery•				
Deep Vein Thrombosis and Pulmonary	415.11 (MCC)			
Embolism Following Certain Orthopedic	415.19 (MCC)			
Procedures	453.40-453.42 (MCC)			
Total Knee Replacement•	And one of the following procedure codes:			
Hip Replacement•	00.85-00.87, 81.51-81.52, or 81.54			

 $SOURCE: \ The \ California \ Office \ of \ Statewide \ Health \ Planning \ and \ Development, 2006 \ \& \ 2007 \ Patient \ Discharge \ Datasets.$

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Mission Statement

Medicare & Medicaid Research Review is a peer-reviewed, online journal reporting data and research that informs current and future directions of the Medicare, Medicaid, and Children's Health Insurance programs. The journal seeks to examine and evaluate health care coverage, quality and access to care for beneficiaries, and payment for health services.

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