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AAHKS Primer on Orthopedic Peri-operative Risk Stratification and Comorbidity Coding

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As we enter the era of public reporting of surgical outcomes, it is critical that surgeons document the medical and surgical complexity of the care they provide. To date, much of the data reported on the internet is not risk adjusted. Since the performance of surgeons and hospitals will be judged and pay may become tied to quality metrics, the American Association of Hip and Knee Surgeons (AAHKS) has been working on ways to improve risk adjustment for outcomes data for the last several years.

HISTORY

Traditional risk adjustment scales have often been subspecialty specific. For example, the anesthesiologists record the American Society of Anesthesiologists (ASA) class of the patient for each surgery we do.[1] Similarly, the cardiologists either use the American Heart Association(AHA) stages of heart failure[2] or the New York Heart Association (NYHA) Functional Classification functional classification[3] to risk stratify patients. Currently, there are no standard risk stratification scales for orthopedic arthroplasty patients.

Several more complex risk stratification schemes exist: the Charlson comorbidity index[4] and the Elixhauser comorbidity measure[5] are among the most commonly used for research. Others include the Cumulative Illness Rating Scale (CIRS)[6], the Cumulative Illness Rating Scale for geriatrics (CIRS-G)[7], the

[1] http://www.asahq.org/resources/clinical-information/asa-physical-status-classification-system
[2] http://www.learntheheart.com/cardiology-review/accaha-heart-failure-classification/
[3] http://en.wikipedia.org/wiki/New_York_Heart_Association_Functional_Classification
[4] Charlson ME, et al. A new method of classifying prognostic comorbidity in longitudinal studies: development and validation J Chronic Dis. 1987;40(5):373-83.
[5] Elixhauser A, Steiner C, Harris DR, Coffey RM. Comorbidity measures for use with administrative data. Med Care. 1998 Jan;36(1):8-27.
[6] Linn BS, Linn MW, Gurel L. Cumulative illness rating scale. J Am Geriatr Soc. 1968 May;16(5):622-6.
[7] Miller MD, Paradis CF, Houck PR, Mazumdar S, Stack JA, Rifai AH, et al. "Rating chronic medical illness burden in geropsychiatric practice and research: application of the Cumulative Illness Rating Scale" Psychiatry Res. 1992 Mar;41(3):237-48.

Kaplan-Feinstein Index[8], the Index of Co-existent Disease (ICED)[9], the Geriatric Index of Comorbidity (GIC)[10], the Functional Comorbidity Index (FCI)[11], and the Total Illness Burden Index (TIBI)[12].

Currently, the documentation of medical comorbidities and complications dictates hospital reimbursement via the DRG system. Specifically, a total joint arthroplasty that is done with associated comorbidities and major complications (MCC)[13] is reimbursed at a higher rate than a case without.

WHEN TO CODE MEDICAL COMORBIDITIES

Until about 2 years ago, the HCFA billing form, CMS 1500[14] only allowed 4 ICD-9 codes as diagnoses. Currently, up to 12 diagnoses can be recorded.

It is mandatory that the impact of these comorbidities on your surgical care be mentioned in your note if you plan to code for them. For example, "the patient's morbid obesity will increase the risk of deep infection three-fold, slow their rehabilitation, and increase their risk for deep venous thrombosis."

For diagnoses that occur during the hospital stay, the over- or underuse of complication codes is likely to be problematic. Specifically, "acute blood loss anemia" (ICD9 code 285.1) could be applied to most arthroplasty surgeries. Thus, if hospital A always codes this and hospital B rarely does, it is possible that hospital A may initially receive a higher reimbursement. Conversely, later review of the data may lead insurers to send patients to hospital B and their surgeons. For this reason, definition of these terms will be critical. (In our hospital, we have agreed that a drop in hemoglobin of greater than 4 points would be labelled "acute blood loss anemia." However, our coders cannot use the code unless we put it in our note.) In current usage, this code is often associated with the need to transfuse. If the pre-op hemoglobin is 10, the appropriate code is "chronic anemia" (ICD9 code 285.9).

HOW TO GET STARTED (OFFICE)

The AAHKS Risk Adjustment Task Force has been working with CMS and the Yale Outcomes Group to improve the risk adjustment models used in TJA performance measures. The goal of performance measures is to give surgeons an accurate assessment of their performance, while controlling for patient factors outside the control of providers. The current TJA performance measures being reported on hospitalcompare.gov are based on administrative claims data. Therefore, unless those risk factors that

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[8] Kaplan MH, Feinstein AR. The importance of classifying initial comorbidity in evaluation the outcome of diabetes mellitus. J Chronic Dis. 1974;27(7–8):387–404.

[9] http://www.nature.com/ki/journal/v60/n4/fig_tab/4492571t1.html#figure-title

[10] Rozzini R[1], Frisoni GB, Ferrucci L, Barbisoni P, Sabatini T, Ranieri P, Guralnik JM, Trabucchi M. Geriatric Index of Comorbidity: validation and comparison with other measures of comorbidity. Age Ageing 2002 Jul;31(4):277-85.

[11] Groll DL, To T, Bombardier C, Wright JG. The development of a comorbidity index with physical function as the outcome. J Clin Epidemiol. 2005;58:595–602. doi: 10.1016/j.jclinepi.2004.10.018.

[12] S. Greenfield, J. Billimek, S. H. Kaplan, The Total Illness Burden Index, in Handbook of Disease Burdens and Quality of Life Measures, 2010, pp 73-85.

[13] http://e-medtools.com/wp-content/uploads/2014/03/DRG_Modifier_Tool_v1.pdf

[14] http://cms.gov/Medicare/CMS-Forms/CMS-Forms/Downloads/CMS1500.pdf

are known to influence outcomes (e.g. smoking, obesity) are captured in the administrative record, your outcomes will not be properly risk adjusted.

To that end we need to begin to document important clinical risk factors for lower extremity arthroplasty and have them tested to see if they improve the current risk model. We have already tested a few of these, that is smoking and obesity, and they improved the model significantly. We hope to continue to optimize the model by adding further clinical variables. Therefore we are seeking your help in systematically capturing the risk variables known to influence outcomes. We have created an easy to use checklist, similar to what you currently use to medical necessity of arthroplasty to avoid RAC audits. We understand that this adds another layer of burden to your preoperative visit, but it is important so that you will be judged fairly and maintain access for our patients.

Clinical Risk Factor	**ICD10 Code**	**Descriptor**
Morbid obesity BMI >40	E66.09	Morbid (severe) obesity due to excess calories
Smoking	Z72.0	Tobacco use
Chronic anticoagulant use	Z79.01	Long-term (current) use of anticoagulants
Chronic narcotic use	F11.20	Opioid dependence, uncomplicated
Workmen's compensation case	Z56.9	Unspecified problems related to employment
Previous intra-articular infection	B94.9	Sequelae of unspecified infectious and parasitic diseases
Congenital hip deformity	M16.31 M16.32	Unilateral OA resulting from hip dysplasia R hip Unilateral OA resulting from hip dysplasia L hip
Angular knee deformity >15 degrees	M21.869	Other acquired deformity of knee
Previous ORIF hip	M16.51 M16.52	Unilateral post-traumatic osteoarthritis, right hip Unilateral post-traumatic osteoarthritis, left hip
Previous ORIF knee	M17.31 M17.32	Unilateral post-traumatic osteoarthritis, right knee Unilateral post-traumatic osteoarthritis, left knee
Depression/psychiatric disease	F48.9	Nonpsychotic mental disorder

The easiest way to incorporate this into your note is as follows. Those who use Cerner should paste this section into your "pre-completed" new patient note. It should likely appear after Radiographs and before the Impression/Plan. The appropriate diagnoses could be checked or the inapplicable ones deleted. Alternatively, the list could be saved as "autotext." The comorbidities discussed in the note should ultimately appear on your CMS-1500. This will allow abstraction for data collection.

For Epic users, this form can be pasted into your note or a smartform can be designed that links these diagnoses to the codes that are attached to your note.

How to use this list:

1. Please put this list in every history and physical for arthroplasty. You may paste the entire list into your note. A word form of this list will be available on the AAHKS website at: http://www.aahks.org/wp-content/uploads/2015/05/comorbidity-code-chart-icd10.doc
2. Checkmark the ones that apply to your current patient. You must indicate the negative impact with a comment such as the one at the end of the list.
3. Make certain that your office coder and your hospital coder enter these codes into the system with your ICD-10 code for the arthroplasty.
4. For surgeons interested in improving their understanding of perioperative comorbidity coding and its necessity, please see the recent JBJS article, "Using Joint Registry Data from FORCE-TJR to Improve the Accuracy of Risk Adjustment Prediction Models for Thirty-Day Readmission After Total Hip Replacement and Total Knee Replacement." Journal of Bone and Joint Surgery, Volume 97A, No. 8, April 15, 2015, 668-671. http://jbjs.org/content/97/8/668
5. To understand how to incorporate the checklist into your EMR see the AAHKS Primer on Risk Adjustment at: http://www.aahks.org/wp-content/uploads/2015/05/primer-risk-stratification-comorbidity-coding-article-update-1016.pdf
6. Questions? Email frank.voss@uscmed.sc.edu

RESOURCES

1. AAHKS Website – www.AAHKS.org see Practice Management
2. Karen Zupko courses
3. Codex
4. AMA coding books