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THE IMPORTANCE OF COLLECTING RISK ADJUSTED PATIENT REPORTED OUTCOMES

Defending your practice

It's All about the documentation !!!!!

Any Questions???

How do quality measures help?

- LOS, Re-admission rates, SSI, PJI, Same day OOB, HCAP, Avatar, MIDAS, Press-Gainey, Pro-publica, PQRS, MU??
- All of these are non-risk adjusted and non-validated survey methodologies-some may improve disease management, some measure patient experience, do they give information that predicts surgical outcome, complications and permits Continuous Quality Improvement (CQI) in all settings?
- CT surgeons made mistakes by collecting non-co-morbidity adjusted data in their Society for Thoracic Surgeons (STS) database
- Force TJR and AJRR-Collect total joint co-morbidity risk adjusted data
  - What about the other non-total joint specialties?

We Surveyed the Landscape for PRO in Order to Measure Quality

- Grant from California Orthopaedic Association-2014
- Collaboration with ETR Associates
- Committee-Howell, Slater, Slosar, Huddleston, Norris
- Collect General Health Assessment
- Looked at all validated MSK **Instruments** for Upper Ext, Spine, Hip, Knee, Foot and Ankle
- Looked at administrative **Tools**
- Conclusion-all Instruments interesting, none risk adjusted, Tools to deploy don't integrate with EMR's yet, very expensive to deploy on top of EMR, can bog down patient visits, collect all or just surgical patient data?

Table 1: Summary Matrix Table_Selected General Health Status Patient Reported Outcome Instruments

Scale	Instrument Name	Source/How to Obtain/URL	Constructs included Outcomes	Validity/ Reliability[1]	Subscales (# of items)	MCID[1]	Use by Registries/ Ortho Associations[2]
SF-12v2	Medical Outcomes Study	Ware http://www.qualitymetric.com/WhatWeDo/SFHealthSurveys/tabid/184/Default.aspx	General Health	Yes	12 items short form Physical and Mental Components	Unknown	CJRR UCSF SCRIPPS
SF-36v2	Medical Outcomes Study	Ware http://www.qualitymetric.com/WhatWeDo/SFHealthSurveys/tabid/184/Default.aspx	General Health	Yes	36v2 items; 8 domains of health: physical function, physical role, bodily pain, general health, vitality, social functioning, emotional role and mental health	Unknown	CJRR Hoag
EQ-5D	EuorQol	http://www.euroqol.org/eq-5d-products/how-to-obtain-eq-5d.html	General Health	Yes (EuorQol)	5 dimensions/items (mobility; self-care; being able to carry out one's usual activities; pain; and anxiety)	Yes http://www.euroqol.org/about-eq-5d/population-norms.html	CJRR Sweden England
PROMIS-10	PROMIS-10 Global Health	http://tdiprm.dartmouth.edu/overview.php	General Health	Yes (TDI Dartmouth)	10 items	Unknown	Dartmouth
HAQ,MHAQ	Stanford Health Assessment Questionnaire	Public Access http://patienteducation.stanford.edu/research/haq20.pdf;	Generic; General Health	Yes; Uhlig et al. 2006; Bruce and Fries, 2003	HAQ-20 items: HAQ-DI 8 items The 2-page HAQ contains the HAQ Disability Index (HAQ-DI), the HAQ visual analog (VAS) pain scale, and the VAS patient global health scale	Unknown	
VR-36 VR-12	Veterans Rand 36	Public Access http://www.chqoer.research.va.gov/docs/VR12.pdf	Quality of Life	Yes	VR-12; VR36 The 12 items in the questionnaire correspond to eight principal physical and mental health domains including *general health*	Unknown	

How do you Connect to EMR

- Most Software Tools will help to patient demographics, patient reported outcomes and concommitant co-morbidities
- In discrete data-points
- Need to decide if want them to report or integrate with your EMR via a connection to permit the EMR to report

Revised Strategy-2016

- COA Committee-Functional Co-Morbidity Assessment-for Risk Adjustment
- N. Abidi, P. Braaton, J. Coe, J. Huddleston, K. Hunt, J. Kelly, E. Kinnucan, R. Navarro, M. Purnell, N. Soohoo,
  - Exec-D. Przepiorski
  - Consultant-P. Franklin-Force TJR, UMASS
- In 2014 not enough normative and abnormal data to permit risk adjustment by co-morbidities
- In 2016 data is accumulating, access to medicare database and other databases-OPTUM is increasing-AJRR-registry data now growing

Why is Risk Adjustment Important?

- If you don't accurately enter risk adjustment factors other people are going to do it for you!!
- CJR and medicare did not necessarily adequately acknowledge all co-morbidities
- CJR may let you enter co-morbidities under quality measures but does not take them into account under reasons for readmissions during financial reconciliation for BPCI program
- As we accumulate data about our practices Risk Adjustment Factors-RAF is measured during inpatient admission
- RAF scores were particularly important for Medicare Advantage payment factors-determined county by county for US-How sick is your patient population?

AAOS Selected PRO

- Quality of Life
  - Veterans RAND (VR-12)
  - PROMIS (10 or CAT)
  - EuroQol-5D (EQ5D)
- Foot and Ankle
  - FAAM
  - FADI
- Knee (ACL)
  - IKDC
  - Marx Activity Rating

- Knee Arthritis
  - KOOS
  - KOOS JR.
- Hip Arthritis
  - HOOS
  - HOOS Jr.
- Shoulder
  - ASES
  - Oxford Shoulder Score
- Shoulder Instability
  - ASES
  - Western Ontario Shoulder Instability Index (WOSI)

AAOS Selected PRO

- Elbow
  - Disabilities of Arm, Shoulder, Hand (DASH)
  - Quick DASH
- Wrist
  - DASH
  - Quick DASH
- Hand
  - DASH
  - Quick DASH

- Spine
  - Owestry Disability Index (ODI)
  - Neck Disability Index (NDI)

Hospital Admissions

How they are Paid

These are the three levels of severity in the MS-DRG system based on secondary diagnosis codes:

1) MCC—Major Complication/Comorbidity reflects the highest level of severity

2) CC—Complication/Comorbidity is the next level of severity

3) Non-CC—Non-Complication/Comorbidity does not significantly affect severity of illness and resource use

How they are Penalized-POA=present on admission-Comorbidity
NPOA-Not present on admission=Complication

Readmissions for Hospital Acquired Conditions-within 30 days of discharge
Urinary Catheters
Infected TKA or THA
Infected Spine
Patient falls
Peri-prosthetic fractures
Mortality

THE NHSN STANDARDIZED INFECTION RATIO (SIR)

A Guide to the SIR

The Standardized Infection Ratio (SIR) is the primary summary measure used by the National Healthcare Safety Network (NHSN) to track healthcare-associated infections (HAIs). As NHSN grows, both in its user-base and surveillance capability, the SIR continues to evolve. Highlighting the SIR and changes resulting from an updated baseline, this document is intended to serve both as guidance for those who are new to this metric as well as a useful reference for more experienced infection prevention professionals.

Essentially, in California the Public Health Department believes that any HAI is reportable

They don't risk adjust to eliminate readmission numbers, just report them

NHSN Risk Adjustment Examples

LAM	diabetes, ASA score, hospital bed size*, BMI, age
FX	gender, diabetes, ASA score, wound class, closure technique, age, procedure duration, BMI
FUSN	gender, diabetes, emergency, trauma, ASA score, hospital bed size*, procedure duration, BMI, spinal level, approach, medical school affiliation*

Medicare- risk adjustment is woefully inadequate and does not recognize Any risk adjustment in Bundled Payment Plans under readmission when you Are at risk

New Data Emerges

- Force TJR-normative data base
- Medicare data base
- Registries-AJRR-level 2 data
  - 2015-Assembled Risk adjustment Task Force
  - Identified 20 must have items
  - 21 Items for a later date
- AAOS convened similar committee
- CJR proposed rule incorporated many of these variables-many removed in final rule
  - This killed small hospitals with a few re-admissions in early CJR or volunatary BPCI program
  - This will encourage Cherry Picking and dumping!!

Risk Variables

- Submission of Risk Variables is a key part of the composite quality score used by CMS to link quality outcomes to payment

- The composite quality score for a participant hospital is determined by performance and improvement in two quality measures as well as submission of voluntary PRO and risk submission data

Required

Admission/discharge date or length of stay	Height + weight and/or body mass index (BMI)
American Society of Anesthesiologists (ASA) score	Pain in non-operative lower extremity joint
Charlson and Elixhauser comorbidity indices	Quantified spinal pain (via Oswestry Disability Index)
Charnley classification	Race and ethnicity
Date of birth	Sex
Single item health literacy screening questionnaire	

General comorbidities

Acquired immune deficiency syndrome/human immunodeficiency syndrome (AIDS/HIV)*	Hemiplegia paralysis other paralysis*
Blood loss anemia and deficiency anemia*	Hyperthyroidism*
Cancer, metatastic, solid tumor and lymphoma*	Immunocompromised
Chronic kidney disease/renal failure*	Mild, moderate, and severe liver disease*
Chronic pulmonary/lung disease*	Obesity*
Connective tissue or rheumatologic disease*	Other neurological disorders*
Diabetes with sequelae, diabetes uncomplicated*	Peptic ulcer disease*
Fluid and electrolyte disorders*	Weight loss*

Addictions other mental health comorbidities

Alcohol abuse*	Psychoses*
Dementia*	Smoking status/nicotine dependence
Depression/psychiatric disease*	Use of chronic (≥90 day) narcotics
Drug abuse (incl. opioids, hallucinogens, inhalants)*	

Cardiac-related comorbidities

Cardiac arrhythmias *	Myocardial infarction/previous cardiac condition
Congestive heart failure*	Valvular disease*

Circulatory vascular comorbidities

Cerebrovascular disease	Peripheral artery and vascular disease*
Coagulopathy*	Pulmonary circulation disorders*
Coronary artery disease	Venous thromboembolism (VTE)/deep vein thrombosis (DVT)
Hypertension (complicated + uncomplicated)*	

COA Committee Findings

- AAHKS and AAOS worked with Surgical Outcomes group at Yale University to determine which co-morbidities can be utilized to assess risk adjustment in patients undergoing THA and TKA
  - http://www.coa.org/docs/WhitePapers/AAHKSPrimer.pdf

- COA Task force put together a compendium for all orthopaedic subspecialties based upon AAHKS initiative

AAHKS List of Co-morbidities

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	Unilateral OA resulting from hip dysplasia R hip
	M16.32	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	Unilateral post-traumatic osteoarthritis, right hip
	M16.52	Unilateral post-traumatic osteoarthritis, left hip
Previous ORIF knee	M17.31	Unilateral post-traumatic osteoarthritis, right knee
	M17.32	Unilateral post-traumatic osteoarthritis, left knee
Depression/psychiatric disease	F48.9	Nonpsychotic mental disorder

AJRR Co-morbidity Calculator

COA Task Force List

- Alcoholism - Chronic
- Allergies – Metal, Suture
- Angular Deformity >15 degrees
- Anticoagulant use – Chronic
- Bacterial Colonization - Chronic Pre-op
- Catastrophic Thinking
- Chondrosis
- Chromosomal Translocation
- Chronic Pain Syndrome
- Collagen Vascular Disorder-Rheumatoid Arthritis, Lupus, Psoriatic Arthritis – often Immunocompromised - Ehlers/Danlos Syndrome
- Congenital Deformities of Operative Region
- C-Reactive Protein (CRP)
- COPD
- Depression/Psychiatric Disorders
- Diabetes - Not Well Controlled-HgA1c above 7.0
- Dialysis

COA Task Force List

- DVT or PE – history of
- Emotional Health
- Erythrocyte Sedimentation Rate (ESR)
- Fractures – Acute/Open
- Fragility
- Heart Disease
- Hemophilia
- Hemoglobin Levels
- Hepatitis C - Chronic Active
- Increased Age – over 80 years of age
- Infection – Active or Previous at Surgical Site
- Insulin - Long-term Use of
- Intra-Articular Infection (previous)
- Liver Disease - Chronic
- Medications – Statins
- Metabolic Syndrome
- Narcotic Use – Chronic - Opioid Abuse, Continuous
- Neurological Disorders –Chronic – Parkinson, prior CVA, Polio, Peripheral Neuropathy, Epilepsy
- Non-Prescription Drug Dependence
- Nutrition Deficiency-low Albumin
- Obesity – Morbid - BMI >40
- Open Reduction of Internal Fixation (ORIF) of a Body Region

COA Task Force List

- Osteoporosis - Severe - BMD >3.5
- Peripheral Neuropathy
- Peripheral Vascular Disease
- Peritoneal
- Renal Failure-BUN/CR-GFR
- Revision Surgery
- Skin Disorders – Chronic
- Sleep Apnea – Obstructive
- Socioeconomic Factors
- Steroid or Immunosuppressive Medication Usage - Chronic
- Suture or Metal Allergy
- Systemic Inflammatory Disease- Rheumatoid Arthritis, Psoriatic Arthritis, Ankylosing Spondylitis, Gout
- Tobacco Dependency - Smoking
- Ulceration of the Body Area - current or past
- Vascular Disease
- Venous Stasis Disease
- Worker's Compensation Case - Adverse Effects of Work Environment
- Wound Healing Problems (history of) or Plastic Reconstruction of Woun

COA Task Force List

- Other Risk Factors:
- Family Support
- Facility where procedure will be performed
- Ability to engage in pre-op learning
- Primary care provider
- Surgeon's experience
- Surgical TEAM factors – Anesthesia (regional and multi-modal experience)
- Therapy Services

COA Task Force List

- **Co-morbidities/risk factors by orthopaedic sub-specialty**
- **Index**
- Hand and Wrist Page 8
- Hip and Knee Arthroplasty Page 10
- Foot and Ankle Page 12
- Shoulder and Elbow Page 14
- Sports Medicine Page 21
- Spine Page 22
- See Table A for a summary of co-morbidities by orthopaedic sub-specialty.

How and where is Co-morbidity data Gathered?

- Your History and physical
- Your Operative Note
- Your Progress Notes
- Your Discharge Summary
- AJRR Registry now collects this info at level 2
- Hospital coders review your notes and code out episodes of care
- The data is fed into programs like MIDAS
- Nurse Quality specialists evaluate the reports prior to submission of data to CMS, etc.

Case example

- 54 year old with MARFANs-right hip fracture
- Other osteoporosis with hip fx M80.851
- Aortic Valve Replacement-Q23.8
- Mitral Valve Procedure
- Right Subclavian Stenosis-Q25.48
- Left Subclavian Steal-stented
- Chronic Anticoagulation-D68.3
- Prior Drug resistant UTI-N39.0
- Prior History of Marijuana and Alcohol dependency-F10.1

Case Example Readmit TKA

- 78 years old-preop tuned all reversible co-morbidities
  - Rheumatoid arthritis treated with prednisone and MTX
  - Lupus-treated with prednisone
  - Diabetes 2, treated as type 1 with insulin
  - Hx of MRSA colonization
- Post-op admitted at 3 weeks with infected TKA
- Noted to have simultaneous drug resistant UTI and diaper usage
- Organism in Urine and infected TKA were the same
- She did not give hx of recurrent UTI, nor did her primary care doc
- She had poor hygeine and care at home by a grandson
- Her albumin dropped from 3.9 preop to 0.9 post-op due to poor appetite and lack of adult supervision

Conclusions

- Need to be aware of necessity of documentation of medical co-morbidities by Orthopaedic Surgeon or their staff
- Need to make primary care docs aware and responsible for impact of management of these co-morbidities preop and post-op- this will be part of ACO-APM model, not MIPS-tougher due to disconnect
- Increased reimbursement for all of this time and work??