

Title of project:

Do Orthopaedic Traumatologists Benefit from the 22-Modifier?

- Hypothesis
  - For complex orthopaedic trauma procedures, 22-modifier is an effective method for receiving higher reimbursements in a timely and cost effective manner.
- Purpose
  - The 22-modifier is a mechanism by which the surgeon may request a higher than standard reimbursement for a particular procedure based on a number of factors, including but not limited to increased intensity, time, technical difficulty, severity of patient condition, physical effort required, mental effort required. It is termed the "increased procedural service" modifier. Both anecdotally and in the published orthopaedic literature very little is known about the practicality of modifier 22. Richman, et al published one of the only studies in the orthopaedic literature specifically looking at the utility of the 22-modifier. They looked at spine procedures and total joint arthroplasty. A total of 150 procedures were billed with the 22-modifier. Of all 150 cases in which the 22-modifier was applied, 42% were reimbursed at a higher rate than the respective insurance company's fee schedule. Of this 42% the increased reimbursement was on average 32%. However, when looking at all procedures in which the 22-modifier was requested the average increase in reimbursement was only 5.5%. They also found that with it took Medicare and Medicaid 7.9x longer to provide reimbursement and private payers 4.6x longer. From this the authors concluded that for spine and arthroplasty procedure the benefit of the 22-modifier is not worth the effort required to request it.
  - The purpose of this proposed study is to investigate the utility of the 22-modifier as it applies to complex orthopaedic trauma procedures. The over-arching question we will seek to answer is "In which situation(s) does the benefit of the 22-modifier outweigh the cost (time and effort) of requesting it". We will attempt to answer this question by characterizing the costs of applying the 22-modifier for certain fracture patterns. Specifically, we will compare cases in which the modifier was applied to cases in which it was not applied. We will ask the following questions; how does application of the 22-modifier effect reimbursement dollar amounts, time to reimbursement, and number of submittals to payer before reimbursement? We will also compare procedure types to one another to determine if certain procedures are more likely to benefit from application of the 22-modifier. The specific procedures we will investigate are pilon ORIF, distal humerus ORIF, acetabular ORIF and tibial plateau ORIF
- Methods
  - Study design
    - Retrospective – chart review of all of the following procedures from 9/2007-present
      - Pilon ORIF
      - Distal humerus ORIF
      - Acetabular ORIF
      - Tibial plateau ORIF
  - There are 2 parts of this study
    - 1 – comparison of pilon ORIFs submitted with 22-modifier to pilon ORIFs submitted without 22-modifier
      - Amount reimbursed - continuous variable
      - Time to payment (continuous variable)
      - Number of submittals before reimbursement (continuous variable)
      - For the cases with 22-modifier applied what was the primary reason given for the request (categorical variable)
      - We will do the same analysis for all fracture patterns
      - For all of the above questions the dependent variable is the outcome noted above and the independent variable is application of the modifier by the surgeon.
    - 2 – only cases submitted with 22-modifier
      - Comparing reimbursements higher than fee schedule (22-modifier accepted) to those at fee schedule (22-modifier not accepted)
        - Amount reimbursed (continuous variable)
        - Time to payment (continuous variable)
        - Reason for requesting increased reimbursement (continuous variable)
        - Payer mix – Medicare, Medicaid, private payer (categorical variable)
        - Injury that most frequently accepted and least frequently accepted (categorical variable)
        - For all of the above questions the dependent variable is the outcome noted above and the independent variable is increased reimbursement by the insurance company.
    - Continuous outcome variable
      - T-test (if normal distribution)
      - Mann-Whitney test (if not normally distributed)
    - Categorical variable
      - Chi-square test – transfer vs non-transfer
    - What are the data, variables that will be employed
      - Type of data: see above
      - What are the dependent & independent variables: see above
      - What are potential confounding variables and sources of bias:
        - Selection bias resulting in limited generalizability.

- Confounding variable that we will not take into consideration is insurance expenditure over life of the policy or during the hospitalization as it relates to acceptance or denial of the 22-modifier.
    - Power calculation
      - Sample size: unknown at this time.
      - Effect size (outcome of interest) based on prior pilot data or published data: there is only one paper in the orthopaedic literature in looking at the 22-modifier and it had a total of 150 patients included.
      - Level of statistical significance AND clinical relevance (significance): economic and decision making analysis Level II.
  - Administrative
    - Division under which research is conducted - Trauma
      - PI – Samir Mehta
      - Jaimo Ahn, Keith Baldwin, Annemarie Horan
    - Funding
      - None
    - Regulation
      - Are there any conflicts of interest or ethical concerns – no
      - IRB submission – completed and approved
      - Study oversight and compliance – Annemarie Horan
    - Feasibility
      - Is the study realistically accomplished: yes
  - End Objective
    - Target meeting AND journal: Research Day 2014, OTA Annual meeting 2014, JOT.

