Spine Pain in VA: Finding the Complete/Right Cohort

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Outline

- Background
- Methods
- Results
- Discussion
Background

- Musculoskeletal Spine Pain in VA, Description and Guideline Adherence (IIR 09-062)
  - Observational study: Administrative data
  - Spine vs. neck vs. back
  - Acute, mechanical or non-specific spine pain
Background

- Back Pain Patient Outcomes Assessment Team (BOAT) (PI – Deyo) 1989 – 1994
  - “the back pain PORT, supported by AHCPR, analyzes practice variations and examines the relative effectiveness of alternative ways of diagnosing and treating back pain”
  - 70 publications
  - Evaluate diagnostic tests, surgery and various interventions
Background

- Mechanical or non-specific low back or neck pain
  - ICD and CPT codes to identify patients in admin data
  - Incidence, prevalence - proxy for morbidity
  - Inclusion and exclusion algorithms
  - Surgical and non-surgical inpatient stays
  - Variation in surgical rates
Background

- Key publications
  
Background

Background

- AHRQ Healthcare Cost and Utilization Project (HCUP) – Clinical Classification Software (CCS) 1988
  - Homogenous clusters of interest to public policy researchers
  - Diagnostic and procedural categories
  - Technical specialists
  - Continuing review for accuracy and clinical significance
Objectives

- Primary assumptions:
  - Changes in medical practice
  - Change in research capacity
  - Changes in research focus

- Review algorithms used to identify patients with spine pain in administrative data

- Revise algorithm if warranted
Objective

- Establish a standard methodology to identify patients with spine pain in administrative data
Methods

- Review ICD and coding methodology
- Identify literature that reports using ICD or CPT codes to identify patients with spine pain and spine surgery in administrative data
- Consolidate definitions – if possible
- Synthesize and test code lists for completeness
Results

- Coding methodology
  - CPT – Procedures and surgeries – five digit
  - ICD – Diagnoses and procedures
    - Three digit
    - Four digit
    - Five digit
Coding methodology

- 721- Spondylosis and allied disorders
  - 721.4 Thoracic or lumbar spondylosis with myelopathy
    - 721.41 Thoracic spondylosis with myelopathy
    - 721.42 Lumbar spondylosis with myelopathy
Literature Review

- Pubmed
- BOAT report
- Web of knowledge
- HCUP CCS categories
Lit review - PubMed

- In any field: Back and ICD and prevalence; Neck and ICD and prevalence; Back and ICD and surgery; Neck and ICD and surgery; Back and CPT and prevalence; Neck and CPT and prevalence; Back and CPT and surgery; and Neck and CPT and surgery.

- In the Title: Back pain and prevalence; Neck pain and prevalence; Back pain and surgery; and Neck pain and surgery.
Lit Review

BOAT – Web of Knowledge

- Web of Knowledge (Thomson Reuters Institute for Scientific Information℠)
Results

- 40 papers
- Excluded those that:
  - Did not include a specific list of inclusion or exclusion codes
  - Did not use administrative data
- Six papers in final synthesis
Final Review

- **Six papers and two HCUP CCS categories**
Coding algorithms….Table A
HCUP – CCS

- Back 205 Spondylosis, intervertebral disc disorders; other back problems
- 7201 7202 72081 72089 7209 7210 7211 7212 7213 72141
  72142 7215 7216 7217 7218 72190 72191 7220 72210 72211
- 7222 72230 72231 72232 72239 7224 72251 72252 7226
  72270 72271 72272 72273 72280 72281 72282 72283 72290
  72291 72292
- 72293 7230 7231 7232 7233 7234 7235 7236 7237 7238 7239
  72400 72401 72402 72409 7241 7242 7243 7244 7245
- 7246 72470 72471 72479 7248 7249
HCUP-CCS

- Sprains and Strains – 232
  - 8400 8401 8402 8403 8404 8405 8406 8407 8408 8409 8410 8411 8412 8413 8418 8419 84200 84201 84202 84209
  - 84210 84211 84212 84213 84219 8430 8431 8438 8439 8440 8441 8442 8443 8448 8449 84500 84501 84502 84503 84509
  - 84510 84511 84512 84513 84519 8460 8461 8462 8463 8468 8469 8470 8471 8472 8473 8474 8479 8480 8481 8482
  - 8483 84840 84841 84842 84849 8485 8488 8489 9057
Definitions

- Mechanical or non-specific spine pain
- Associated with pain including radicular symptoms
- Excluding
  - Neoplasm, infectious, inflammatory causes
  - Associated with pregnancy or trauma
White Board
Definitions


Definitions

- HCUP – CCS
- Cherkin & Deyo
- Martin “Neck and Back”
- Dionne
Definitions

- Conditions that originate anywhere in the spine
  - Neck pain – cervical spine
  - Back pain – thoracic, lumbar, sacral and coccygeal spine
  - Low back pain – lumbar, sacral, coccygeal spine
Definitions
Definitions

- Cervical spine
- Thoracic spine
- Thoraco-lumbar spine
- Lumbar spine
- Lumbo-sacral spine
- Sacral spine
- Coccyx
Consolidated list

- View Excel table: Combined back and neck
- Summary of all codes
- Indicates inclusion and exclusion per each paper or HCUP category
Patterns

- Inclusion/exclusion based on criteria described in paper or software
  - Neck pain does not include TLSC spine and vice versa
  - HCUP definition back=all spine
  - Martin = broadest definition of back and neck: Angevine = most narrow
Testing: Global Exclusions

– View Table 9 Exclusions
Sequential additions - Back

- View Table 7
Sequential additions - Neck

- View Table 8
Surgery and Procedures

- View excel worksheet Surgery and Procedures
Non-specific codes

- View Table 10.
Algorithms to specify surgery

- View Table 11
Defining your cohort

- Mechanical or non-specific spine pain
  - Excluding
    - Neoplasm, infectious, inflammatory causes
    - Associated with pregnancy
    - Associated with trauma (?)

- Surgical and/or non-surgical patients?
Defining your cohort

- Which spinal segment(s)?
  - Back
  - Low back
  - Neck
  - Thoracic spine, sacrum and coccyx
Defining your cohort

- BOAT algorithm (?)
- What to do about:
  - Ankylosing spondylitis, etc (720.0-720.9)
  - Curvatures of the spine (737.0 – 737.9, excludes congenital)
  - Acquired spondylolisthesis and other acquired deformity of the back or spine (738.4-738.5)
Defining your cohort

What to do about:

- Nonallopathic lesions of the spine (739.1-739.4)
- Anomalies of the spine (756.10-756.2)
- Open/closed spinal fractures (805.0-806.9)
- Other vertebral dislocations (839.0-839.5)
Defining your cohort

- Codes where spinal segment not specified (e.g. could be back or neck)
How we are proceeding

- Acute, mechanical or non-specific spine pain
  - Including all spine segments and diagnoses
  - Identify all Veterans treated for spine pain in FY2002-2009
  - Identify first event in data
How we are proceeding

- Excluding global conditions (if appear twice in a year, etc)
- Excluding post-surgical cases (no spinal procedures within 1 year of entering the spine pain cohort)
- Excluding trauma and fractures
  - E-codes and vertebral fractures open and closed (major codes 805 – 806)
How we are proceeding

- Define spinal segment by ICD code when possible
- Require additional diagnoses to confirm spinal segment for those cases with non-specific coding.
- Summarize and report
Questions?