



**2009 OTA Annual Meeting
Manchester Grand Hyatt
San Diego, CA**

(#S10): Mini Symposium:

**Fragility Fractures and Bone Health: Beyond
ORIF**

Elizabeth F, Level II

**1:15pm – 2:45pm
Saturday, October 10, 2009**

Moderator: Douglas R. Dirschl, MD

**Faculty: Clifford B. Jones, MD
Joseph M. Lane, MD
Priscilla Majewski**

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Disclosure: Faculty disclosure can be found starting on page 67 of the 2009 OTA Annual Meeting program.

Fragility Fractures, Community Solution: Grand Rapids, MI, Clifford Jones, MD

Mini-Symposium for 2009 OTA Annual Meeting

Fragility Fractures and Bone Health: Beyond ORIF

Saturday, October 10, 2009

1:15-2:45 PM

San Diego, CA

Community Solution: Grand Rapids, MI

15 min

Clifford Jones, MD, FACS, Orthopaedic Associates of Michigan

Debra Sietsema, PhD, RN, Orthopaedic Associates of Michigan

- Presented as a case example of how one community has approached this issue
- Rationale
 - Provide complete, consistent, and competent quality care
 - Efficient and Effective care
 - Improve fracture healing in complex and challenging patients
 - Prevent subsequent fractures, falls, and attrition
- Organization
 - Orthopaedic Associates of **Error! Reference source not found.**, one for each office and each hospital
 - Research/Quality Coordinator: PhD
 - Administration: IT services, Bracing, OT/PT, Billing
 - Other:
 - Orthopaedic Residents
 - Orthopaedic Inpatient Nursing Coordinators
 - Hospital Lab & DXA services
 - Specialty Pharmacy Services
- Partners and buy-in
 - CMS & PQRI
 - Easy, passive, consistent, and complete process/quality

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- Approved protocols
- Referral:
 - Internal:
 - Direct from surgeon
 - Based upon history, mechanism, intraop findings
 - Indirect from surgeon
 - CPT codes: hip, pelvis, ankle, distal radius, proximal humerus, spine
 - Internal review process
 - One stop referral process
 - Outside sources
 - Other orthopaedic surgeons & PCP
 - Local talks & Community outreach
 - Patient word of mouth
- Methods
 - Inpatient Process
 - Failed process – fracture of proximal humerus, distal radius, proximal femur, pelvis, ankle, spine combined with mechanism of injury and radiographic bone quality
 - Surgery for TJA or Spine with less than optimal bone quality
 - Referral to Bone Health Service (NP)
 - Labs – Calcium, Vitamin D 25 (OH), iPTH, TSH, urine N-telopeptide, CMP
 - DXA – outpatient
 - Vitamins
 - Calcium Citrate 500 TID
 - Ergocalciferol 50,000 Units day one

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- Vitamin D3 2000 Units a day or adjusted based on Vitamin D results
- Early assessment of medical needs: bisphosphonate or teriparatide
 - Own the Bone registry
- Outpatient Process
 - Templating referral with Labs & DXA
 - Templating history & physical and plan with automated letter to PCP
 - Appropriate medical management
 - Opportunity for PCP:
 - Primary management
 - Secondary management after fracture healed
 - Tertiary management or hands off
- Lessons learned
 - Orthopaedists and Patients have much to learn and improve upon
 - Vita D deficiency, Testosterone deficiency, Male involvement
 - Repeat offenders: fractures, falls, vitamins, meds
 - Diligent, persistent, consistent
 - Get family members involved
 - Get better history from patient
 - Refer patient to community/educational groups
 - Dispel patient myths, disbelief, and encourage confidence in lifestyle change
 - Physician & Nursing Champions
 - Coordination with partners, hospital, and patients/families difficult but doable
- Outcome

Osteoporotic Risk Fractures in Patients Surgically Treated for Distal Radius Fractures

Introduction: The first osteoporotic fracture is often a distal radius fracture. The purpose of this study was to determine osteoporotic risk factors in patients with surgically treated distal radius fractures. **Methods:** During a 5-year period, 2002-2007, 273 patients at a large private orthopaedic practice were determined to have surgically treated distal radius fractures as a result of low energy falls. Risk assessment surveys were sent to these patients.

Results: 103 (28%) surveys were returned. There were more females (82, 79.6%) than males (21, 20.4%) with an average age of 63 (31-91) and BMI of 28.3 (16-58). 44 (42.7%) had a DXA scan prior to the fracture of which 18 (17.5%) were diagnosed with osteoporosis and 10 (9.7%) were treated with bisphosphonates. Risk factors include: loss of height (40, 38.8%), parent had fracture due to a fall (43, 41.7%), weight bearing exercise <3 times per week (81, 78.6%), inadequate calcium in diet/supplements (51, 49.5%), fallen >1 times in previous year (47, 45.6%). 20 (19.4%) had fractures from low energy falls prior to the distal radius fracture. As a result of the distal radius fracture: 15 (14.6%) were referred for osteoporosis evaluation; 23 (22.3%) had DXA scans; 42 (40.8%) had calcium supplements recommended; 18 (17.5%) had vitamin D supplements recommended; 3 (2.9%) were referred for fall prevention or balance training; 15 (14.6%) were referred for an exercise program; 17 (16.5%) were prescribed medication for osteoporosis.

Conclusions: Osteoporosis risks were high in those who had low energy falls resulting in distal radius fractures, but risk assessment, referral, and treatment was minimal. Osteoporosis screening following distal radius fractures is essential to promote positive lifestyle behaviors, maximize bone mass early, and decrease the risk of sustaining a secondary osteoporotic fracture. Since this study, a fragility fracture osteoporosis clinic was initiated.

Fragility Fractures, Community Solution: Grand Rapids, MI, Clifford Jones, MD

A Fragility Fracture and Osteoporosis Center: Report of Development and Initial Implementation

Background: Fragility fractures are common injuries resulting from the osteoporosis “silent epidemic.” However, the screening, diagnosis, and treatment of osteoporosis in these patients are reportedly inadequate. The purpose of this study is to report the development and initial implementation of a fragility fracture and osteoporosis center.

Methods: An Osteoporosis Center at a large orthopaedic practice was implemented to identify, evaluate, educate, and treat patients at risk for osteoporosis because of a fragility fracture. System modifications included: coordination among the inpatient orthopaedic unit, outpatient radiological and laboratory services, and orthopaedic private practice clinic and occupational and physical therapy for a continuum of care. A nurse practitioner completes inpatient consultation and follows the patient outpatient for diagnosis, counseling, and treatment. Osteoporosis risk factors were assessed.

Results: 151 patients with fragility fractures and/or at risk for osteoporosis have received consultations in the first two months of the program. Patient’s mean age was 64 years (17-100) with 81.5% females and 18.5% males, and average BMI of 29.5. Fragility fractures consisted of: ankle (23%), spine (21%), femoral neck (20%), distal radius (14%), proximal humerus (8%), and other (14%). Despite fragility fractures, DEXA results consisted of osteoporosis (28%), osteopenia (35%), and normal (37%). The primary abnormal laboratory result was Vitamin D deficiency in 53.3%. In addition to physical therapy focusing on core strengthening, education, counseling, and pharmacological treatment, the primary care provider receives a letter regarding the osteoporosis care initiated.

Conclusions: A coordinated post fragility fracture osteoporosis program establishes a high standard of quality care. This is a proactive method to treat osteoporosis and prevent secondary fractures. A dedicated multidisciplinary team of orthopaedic surgeons, nurses, physical and occupational therapists, and technologists accomplish this goal.