



Welcome!

FLS Bone Health ECHO® TeleECHO Clinic

We will be recording this TeleECHO Clinic for educational and quality improvement purposes.

By participating in this clinic you are consenting to be recorded.

If you do not wish to be recorded, please email andrea.medeiros@nof.org at least one week prior to the TeleECHO Clinic you wish to attend.

Please type in your name, location, and email address in the chat.

Clinic will start in less than 15 minutes

Some helpful tips:

Please mute your microphone when not speaking

Position webcam effectively

Communicate clearly during clinic:

- ▶ Speak clearly
- ▶ Use chat function

Project ECHO's goal is to protect patient privacy

To help Project ECHO accomplish that goal, please only display or say information that doesn't identify a patient or that cannot be linked to a patient.

References:

For a complete list of protected information under HIPAA, please visit www.hipaa.com

Common HIPAA Identifier Slip-Ups and Easy Ways to Protect Patient Privacy

1st – **Names:** Please do not refer to a patient's *first/middle/last name* or use any *initials*, etc. Instead please use the *ECHO ID*.

2nd – **Locations:** Please do not identify a patient's *county, city or town*. Instead please use only the patient's *state* if you must or the *ECHO ID*.

3rd – **Dates:** Please do not use any dates (like *birthdates*, etc.) that are linked to a patient. Instead please use only the patient's *age* (unless > 89)

4th – **Employment:** Please do not identify a patient's *employer*, work *location* or *occupation*. Instead please use the *ECHO ID*.

5th – **Other Common Identifiers:** Do not identify patient's *family* members, *friends, co-workers, numbers, e-mails*, etc.

NOF Staff Disclosures

Andrea P. Medeiros, Director, Programs, Policy & Membership:
Nothing to Disclose

Ami Patel, Director, Professional Education and Medical Affairs:
Nothing to Disclose

Planning Staff Disclosures

Linda Bowka: Consultant-RPJ FLS

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MAYO CLINIC

HEALTH SYSTEM

Bone Health Clinic Mayo Clinic Health System

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Bone Health Clinic

- No disclosures
- Employed by Mayo Clinic Health System-Mankato

Bone Health Clinic

“The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge, a union of forces is necessary.”

- Bone Health Clinic/Fracture Liaison Service: A unique and innovative collaboration between Orthopedic Surgery & Endocrinology
- Delivery of osteoporosis care by Orthopedic Surgery service in the setting of post-fracture follow-up, impending fracture, concerns for possible future fragility fracture, untreated osteoporosis.

Bone Health Clinic



Bone Health Clinic



- Mankato, MN
- 272 Bed Hospital
- Level III Trauma Center (plans to become Level II by 2030)
- Referral center for Southwest Minnesota
- Multiple specialties
- 8 Board Certified Surgeons

Bone Health Clinic



- Austin, MN
- 82 Bed Hospital



- Albert Lea, MN
- 107 Bed Hospital
- Level IV Trauma Center

Bone Health Clinic

- The risk of future fracture is increased 5-fold after the first fragility fracture
- Yet, only 1 in 5 fracture patients receive screening for prevention of subsequent fractures
- 50% of repeat fractures can be avoided
- Fracture patients are less likely to follow-up after the acute problem has been managed (due to lack of perceived need)
- **Orthopedic surgery** has the unique opportunity to capture these patients to ensure they receive adequate care

Bone Health Clinic



THE MANAGEMENT OF OSTEOPOROSIS AFTER FRAGILITY FRACTURE

The Orthopaedic Perspective

Jonathan Morris, MD
Alexa J. Karkenny, MD
Jose B. Toro, MD

Investigation performed at the Jacobi Medical Center, Bronx, New York

Abstract

» The greatest risk factor for fragility fracture is a previous fragility fracture.

» During post-fracture follow-up, the orthopaedic surgeon has an opportunity to intervene in the management of osteoporosis.

» A novel algorithm for interpreting laboratory values and starting antiresorptive and bone-stimulating agents is presented.

Osteoporosis is the most common metabolic bone disease worldwide¹. It is a result of an imbalance in bone formation and resorption leading to disruption of bone microarchitecture. This disruption of normal physiology ultimately results in increased fracture risk. The prevalence of osteoporosis and its associated fragility fractures have been progressively increasing, and this course is projected to continue from 2 million fractures in 2005 to a projected 3 million fractures in 2025 in the United States. Annually in the United States, osteoporosis is implicated in approximately 280,000 hip fractures, 540,000 vertebral fractures, 380,000 wrist fractures, and >800,000 fractures at other sites^{2,3}.

Fracture is the most common musculoskeletal admission requiring hospital admission among the Medicare population⁴. The lifetime risk of any fragility fracture approaches 40% in Caucasian women and 13% for men who are ≥ 50 years of age⁵. In total, 50% of women and 25% of men who are ≥ 50 years of age will have an osteoporosis-related fracture in their lifetime⁶.

Fragility fractures are not benign events. A history of a fragility fracture increases the risk of future fragility fractures.

A prior vertebral compression fracture results in a 5 times greater risk of future vertebral compression fracture and a 2 times greater risk of future hip fracture⁷. Hip fractures are associated with an overall mortality of 15% to 30% within 1 year of fracture⁸. A majority of the deaths occur within the first 6 months after the fracture, with 1 study showing 52.4% of deaths occurring within 3 months of the fracture and 72.5% of deaths occurring within 6 months of the fracture⁹. Less than 25% of patients who present with fragility fractures for the first time receive initial drug therapy to treat the underlying osteoporosis¹⁰; at 2 years, only 60% of these patients are compliant with the medication¹⁰.

Despite the high prevalence of osteoporosis and the widespread knowledge of the risk of fragility fractures, the role of the orthopaedic surgeon who primarily treats these fractures remains unclear. Patients are often referred to their primary care physician for osteoporosis management after acute management of the fracture¹¹. However, recently, it has been demonstrated that when the orthopaedic surgery team initiates osteoporosis management, the rate of patients receiving treatment increases¹¹. Thus, there is a tremendous opportunity to improve the

- 10 wrist fractures (2 open)
- 7 hip fractures (1 peri-prosthetic)
- 6 ankle fractures (2 open)
- 5 Proximal humerus fractures
- 2 supracondylar femur fractures (1 peri prosthetic)
- 1 Orthopedic Physician Assistant that was thinking of changing careers after this terrible weekend

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Disclosure: There was no source of external funding for this study. The Disclosure of Potential Conflicts of Interest forms are provided with the online version of the article (<http://links.lww.com/JBJSREV/A236>).

JBJS REVIEWS 2017;31(8):e4 • <http://dx.doi.org/10.2106/JBJS.RVW.16.00098>

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Bone Health Clinic

- Mayo Clinic Health System-Mankato
- 2019
- Referrals: Orthopedics, Family Practice, Neurosurgery, Internal Medicine
- 180+ patients (adding 300+ patients end of July)
- ~50% of fractured patients met NOF/WHO criteria of treatment prior to their fracture

Bone Health Clinic

Who (is targeted)?

- **Men & women over age 50** who have sustained a fragility fracture, at risk for a fragility fracture, untreated osteoporosis or failed prior treatment.
- **Fragility fractures**= fracture of the axial spine, pelvis, or long bones (upper & lower extremity) resulting from low energy injury (i.e. a fall from a standing height).
- **Bone health optimization**=surgical patients with poor bone quality that need peri-operative education or initiation of medical treatment to ensure a good outcome.

Bone Health Clinic: Goals

- Patient Education (Mayo Osteoporosis brochures)
- Calcium + Vitamin D supplementation
- Fall prevention
- Stratify the risk of secondary fractures (FRAX calculator)
- Initiate appropriate pharmacotherapy for selected patients based on Ask Mayo Expert Care Process Models, National Osteoporosis Foundation, World Health Organization guidelines

Bone Health Clinic - Evaluation

- Focused history & exam
- Testing prior to visit
 - Bone Mineral Density (DEXA) if not completed in the last 2 years
 - FRAX (Fracture Risk Assessment Tool)
 - Vertebral imaging
 - Calcium
 - Creatinine
 - TSH
 - CBC
 - PTH
 - 25-hydroxyvitamin D
 - Fall Risk Assessment

Bone Health Clinic – Additional tests

- Additional lab tests if indicated
 - Phosphorus
 - Bone alkaline phosphatase
 - Celiac antibodies
 - Monoclonal protein study
 - Testosterone level
 - 24 hour urine collection for calcium

Bone Health Clinic – Counseling & OTC

Counseling and Education(Mayo Patient Education Pamphlets)

- Diet
- Physical activity
- Calcium/Vitamin D supplementation
- Smoking cessation
- ETOH Moderation
- Fall Prevention
 - Assistive Walking Devices
 - Muscle-strengthening exercise & balance training

Bone Health Clinic - Pharmacotherapy

Indications:

- Low energy vertebral, hip/pelvis, proximal humerus fractures, and some lower extremity fractures fracture(s)
- T-score ≤ -2.5 at the hips, lumbar spine, or distal radius
- Low bone mass (osteopenia) and a U.S. Adapted WHO 10-year probability of a hip fracture $\geq 3\%$ or 10 year probability of any major-related fracture $\geq 20\%$ or previous fragility fracture

Bone Health Clinic - Pharmacotherapy

- Oral bisphosphonates
- Zoledronic Acid
- Denosumab
- Teriparatide
- Abaloparatide
- Romosozumab

Bone Health Clinic – Endocrinology Referral

- Complex patients with secondary osteoporosis
- July 2021 Losing our only Endocrine Physician for the whole region (1 APP locally in Endocrine that does not treat Osteoporosis)
- Established relationship with Mayo Rochester Bone Group

Bone Health Clinic

Late 2018	Early 2019	March 2019	July 2019	Early 2020	Late spring 2020	July 2020	September 2020
<ul style="list-style-type: none"> Start discussion with local administrators and operations managers on starting clinic. (Overwhelming approval) 	<ul style="list-style-type: none"> Begin planning clinic flow process (nursing role, injections/infusion process, protocols). Meeting with local Endocrinology Physician to discuss each others roles and how to enhance each others practice 	<ul style="list-style-type: none"> Clinic starts 	<ul style="list-style-type: none"> Establish relationships with Family Practice and Neurosurgery 	<ul style="list-style-type: none"> Dedicated nurse 	<ul style="list-style-type: none"> Covid-19 Pandemic (all clinical practice stops except for emergent patients) 	<ul style="list-style-type: none"> Telemedicine to continue Bone Health Practice 	<ul style="list-style-type: none"> Return to in person patient visits

Bone Health Clinic

2021	2021-2022	2022-?	Forever and ever....
<ul style="list-style-type: none">• Injection room• Continue Telehealth	<ul style="list-style-type: none">• Additional Provider• Total joint arthroplasty optimization	<ul style="list-style-type: none">• Epic Registry• Discuss starting other MCHS sites	<ul style="list-style-type: none">• Continued self-education

Bone Health Clinic

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Thank You