The Role of the FLS Coordinator

Josée Delisle, BScN, MSc

IOF Webinar, December 12th, 2017
Disclosures

I declare that in the past 3 years:

We have received support from the following companies:

*through research grants*

  *Eli Lilly Canada*

I have done consulting work for the following companies:

  *Amgen*

I have done speaking engagements for the following companies:

  *Eli Lilly Canada, Amgen*

I or my family do not hold individual shares in the above-mentioned companies.
Presentation Outline

• Fragility Fracture

• Fracture Liaison Services

• Role of the coordinator
  • Dedicated vs standardized order set

• Challenges & Solutions

• FLS evaluation

• Capture The Fracture
Fragility Fractures

• The impact of fragility fractures (FF) is a growing health care issue.

• Few management systems aiming to reduce and prevent secondary fractures are currently in place.

• Historically, fragility fractures were poorly recognized and poorly treated¹

¹Bessette and al 2008
Fragility Fractures

• Wrist Fx:
  • 14% subsequent fracture at 3 years

• Vertebral Fx:
  • 20% subsequent fracture at 1 years

• Hip Fx:
  • 33% subsequent fracture at 1 years
  • 50% subsequent fracture at 5 years

• 50% hip fracture patients had already sustained a previous fracture

http://www.osteoporosis.ca/
Fragility Fractures

Projected number of osteoporotic hip fractures worldwide

Projected to reach 3.250 million in Asia by 2050

Total number of hip fractures:
1950 = 1.66 million
2050 = 6.26 million

Estimated number of hip fractures: (1000s)

Adapted from Cooper et al, Osteoporos Int. 1992; 2:285-9/ IOF Slide Kit
Fragility Fractures

Incidence of Osteoporotic Fracture, Heart Attack, Stroke and Breast Cancer in Canadian Women

Annual Incidence of Common Diseases

- 138,600
- 39,500 (Other)
- 9,800 (Pelvic)
- 31,100 (Wrist)
- 37,000 (Vertebral)
- 21,200 (Hip)

http://www.osteoporosis.ca/
Fragility Fractures
Fragility Fractures

Osteoporosis and FF throughout the life course

http://www.osteoporosis.ca/
Fragility Fractures

CARE GAP
- 20% patients ID and/or treated

Fragmented System of Care

- Multiple doctors
- Multiple nurses

Impacts patient’s Quality of Life (QoL)
- Increase health care costs
Solution?
Build a team!
Make the FIRST break the LAST

FRACTURE LIAISON SERVICES

www.osteoporosecanada.ca
Fracture Liaison Service (FLS)

- All patients presenting with fragility fracture should be assessed to determine their need for antiresorptive therapy to prevent future osteoporotic fractures
  NHFD – field 5.02

- All patients presenting with a fragility fracture following a fall should be offered multidisciplinary assessment and intervention to prevent future falls
  NHFD – field 5.01

http://www.nhfd.co.uk/
Fracture Liaison Service (FLS)

- An FLS is a proven model for fragility fracture prevention
- 50% of hip fracture patients have had a prior fragility fracture
- All patients > 50 years who fracture are targeted

Find them ➔ Assess them ➔ Treat where appropriate ➔ Follow-up

- Where treatment is initiated
- Up to 25% hip fractures avoided in future

OPINION PAPER

Fracture prevention in Kaiser Permanente Southern California

R. Dell

Abstract
The Kaiser Permanente Healthy Bones Program has used a systematic approach to address the osteoporosis/fracture care gaps. The article discusses the ten-step processes that utilize information technology and care managers to identify, risk stratify, treat, and then track our patients with care gaps. This program has led to 40+% reduction in the expected number of hip fractures in 2009 that we attribute to the increase in DXA screening followed by appropriate osteoporosis treatment.
Fracture Liaison Service (FLS)

The Cost Effective Solution — Closing the Gap with Fracture Liaison Services

Growing number of Fracture Liaison Services (FLS) in Canada.
Ensures that all patients who present with a ‘signal’ fracture receive the osteoporosis care they need to prevent future fragility fractures.

The Benefits of FLS

• Improved quality of life
• Reduced incidence of avoidable fractures
• Reduced disruption to patient flow in the health care system
• Significant cost-savings (P.3)
Fracture Liaison Service (FLS)

**Definition**
- Usually coordinator-based
- secondary fracture prevention services
  - treatment of osteoporotic patients.

**Goal**
- Close the care gap
- Enhance communication between health care workers
- Provide care pathway

http://www.capture-the-fracture.org/fracture-liaison-services
Fracture Liaison Service (FLS)

- Improves identification rates
- Promotes fracture risk assessment through BMD & Fracture risk assessment tools (FRAX, CAROC, Qfracture)
- Promotes standardized treatment initiation and adherence
- Decrease subsequent fracture rate
Fracture Liaison Service (FLS)

Key stakeholders

• Physician champions

• NP/RN Fracture Care Providers
  • Coordination

• Administration
  • Policy
Fracture Liaison Service (FLS)

FLS Team members

- Orthopaedic Surgeons
- Primary Care Physicians
- Nurses/NP/PA
- Inpatient Services
- Internal Medicine
- Rheumatology
- Endocrinology
- Gynecology
- Radiology
- Pharmacy
- Physical Therapy (Fall Prevention program)
- Long Term Care
- Health Education
- Home Health

Lisa Voss PA-C, MHS, CCD
Laura Frontiero FNP-C, MSN, CCD
FLS Care Coordination. Interdisciplinary Symposium on Osteoporosis (ISO14) in New Orleans, Louisiana, April 23-26, 2014.
# Fracture Liaison Service (FLS)

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Proportion receiving BMD testing*</th>
<th>Proportion receiving osteoporosis treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Status Quo(^5)(^4)</td>
<td>Manitoba statistics for major osteoporotic fractures (2007/2008)</td>
<td>13%</td>
<td>8%</td>
</tr>
<tr>
<td>Type D (Zero i model)</td>
<td>Only provides osteoporosis education to the fracture patient. Primary care provider (PCP) is not alerted or educated.</td>
<td>No study on BMD testing</td>
<td>8%</td>
</tr>
<tr>
<td>Type C (1 i model)</td>
<td>1. Identification The PCP is alerted that a fracture has occurred and further assessment is needed. Leaves the investigation and initiation of treatment to the PCP.</td>
<td>43%</td>
<td>23%</td>
</tr>
<tr>
<td>Type B (2 i model)</td>
<td>1. Identification 2. Investigation Leaves the initiation of treatment for fragility fracture patients to the PCP.</td>
<td>60%</td>
<td>41%</td>
</tr>
<tr>
<td>Type A (3 i model)</td>
<td>1. Identification 2. Investigation 3. Initiation of osteoporosis treatment where appropriate.</td>
<td>79%</td>
<td>46%</td>
</tr>
</tbody>
</table>

* Although BMD testing is an important aspect of post-fracture care, in and of itself it cannot impact the rate of repeat fractures. Osteoporosis medication is necessary in order to reduce the rate of repeat fractures.

Osteoporosis Canada FLS toolkit 2013
The Fracture Liaison Service! ➔ 4is

- Identify FF
- Investigate for bone fragility
- Initiate preventive therapy
- Integrate to multidisciplinary follow-up
Fracture Liaison Service (FLS)

5IQ approach

Identification
Investigation
Information
Intervention and Integration
Quality
Fracture Liaison Service (FLS)

The first 4 is...

*Identification*
*Investigation*
*Intervention*
*Integration*
Fracture Liaison Service (FLS)

1st Identify FF

- Patients over 50 years old with fragility fracture
- Pro Active screening (in patient & out patient)
- Emergency department
- Vertebral Fractures (radiology)
Fracture Liaison Service (FLS)

Investigate for bone fragility

- Bone Mineral Density (BMD)
  - DEXA
- Risk Assessment Tool
  - FRAX (https://www.sheffield.ac.uk/FRAX/tool.aspx)
  - Qfracture (http://www.qfracture.org/index.php)
  - CAROC (https://www.osteoporosis.ca/multimedia/pdf/CAROC.pdf)
FRAX

Outil d'Evaluation des Risques de Fractures

Outil de Calcul

Veuillez répondre aux questions ci-dessous pour calculer la probabilité de fracture sur 10 ans sans ou avec DMO

Questionnaire:
1. Âge (entre 40 et 99 ans) ou Date de Naissance
   - Age: 64
   - Date de Naissance: 12/08/2000
2. Sexe
   - Masculin
3. Poids (kg)
   - 57
4. Taille (cm)
   - 165
5. Fracture antérieure
   - Non
6. Parents ayant eu une fracture de la hanche
   - Non
7. Actuellement Fumeur
   - Non
8. Glucocorticoïdes
   - Non
9. Polyarthrite rhumatoïde
   - Non
10. Osteoporose secondaire
    - Oui
11. Acôl trois unités par jour ou plus
    - Non
12. DMO du Col Fémoral (g/cm²)
    - 0.8

BMI: 20.9
The ten year probability of fracture (%)

Facteurs de Risques

Pour les facteurs de risques cliniques, une réponse par oui ou par non est demandée. Si le champ est laissé blanc, alors une réponse "non" sera supposée. Voir aussi Notes sur les facteurs de risques.

Les facteurs de risques utilisés sont les suivants:
Qfracture

Welcome to the QFracture®-2016 risk calculator: http://qfracture.org

Your results

Your risk of having any osteoporotic (i.e. hip, wrist, shoulder or spine) fracture or hip fracture alone within the next 10 years is:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip, wrist, shoulder or spine</td>
<td>18.4%</td>
</tr>
<tr>
<td>Hip fracture</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

In other words, in a crowd of 100 people like you, 18 will develop osteoporotic fracture of hip, wrist, shoulder or spine within the next 10 years. Similarly, 4 will develop hip fracture within the next 10 years. This is represented by the smileys below.

fracture of hip, wrist, shoulder or spine

hip fracture
Calculating 10-Year Absolute Fracture Risk for Postmenopausal Women: CAROC

10-year absolute fracture risk in treatment naïve women combining femoral neck T-score and age:

- **Low Risk** (< 10%)
- **Moderate Risk** (10%–20%)
- **High Risk** (>20%)

Increases to the next risk category:
- Prior fragility fracture after age 40
- Prolonged corticosteroid therapy

Prior hip or vertebral fracture, or >1 non-vertebral fragility fracture

Lumbar spine or total hip T-score ≤ -2.5: consider the individual to be at least at moderate risk

Calibrated using Canadian fracture data and have been directly validated in Canadians.

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Fracture Liaison Service (FLS)

3rd Initiate preventive therapy
Fracture Liaison Service (FLS)

4th Integrate to multidisciplinary follow-up

Monitor

Adherence to treatment

Fall hx

Subsequent fracture

Fracture under treatment (treatment failure)
FLS Essential element
An FLS, made up of a committed team of stakeholders, employs a dedicated coordinator to act as the link between the patient and the orthopaedic team, the osteoporosis and falls prevention services, and the primary care physician.
"A Fracture Liaison Service, delivered by a Nurse Specialist, is a proven approach to the identification, assessment and treatment of fracture risk, and this model should be considered in all units." (page 5)
FLS Essential element

1. **A dedicated coordinator** is central to the FLS model of care:
   a. exclusively responsible and accountable for all the FLS functions OR
   b. exclusively responsible and accountable for the first FLS function (identification) and for the transfer of the second and/or third FLS functions (investigation and initiation) to a clearly designated osteoporosis expert or osteoporosis specialty team.

• Appoint a FLS Coordinator who is typically a Nurse Specialist or Allied Health Professional.
The Role of the Nurse in Osteoporosis Management

- Coordinate multidisciplinary team
- Manage FLS
- Identify, Investigate (risk assessment)
- Educate and counsel patient
- Initiate treatment (create treatment plan)
- Integrate patient into follow up
- Evaluate adherence
FLS Coordinator
FLS Coordinator

1-Dedicated FLS Coordinator

- Nurses
- Allied Health professionnals
- Nurse Practitionners
- Non-clinical personnel

2-Standardized Order Set

- Hospital Staff Nurses
Dedicated FLS Coordinator
Dedicated FLS Coordinator

Lead by Nurse Specialist
• Involves Multidisciplinary Team
  • orthopaedic surgeons,
  • geriatricians,
  • nursing staff
  • allied health professionals

http://www.capture-the-fracture.org/fracture-liaison-services
Dedicated FLS Coordinator

http://www.capture-the-fracture.org/fracture-liaison-services
Ontario Osteoporosis Strategy

The Osteoporosis Exemplary Care Program coordinator

• Designed to overcome systemic and individual barriers

• Offers coordination among the orthopaedic, endocrinology, and nuclear medicine units

• Provides continuum of care

• Based on guidelines for osteoporosis care
Ontario Osteoporosis Strategy

The Osteoporosis Exemplary Care Program coordinator

1- Screening (Monday through Friday),
   - all fracture clinic outpatients
   - orthopaedic inpatients
2-Consulting
   - attending orthopaedic surgeon
   - resident
3-Reviewing patient’s chart
4-Interviewing patient
5-Confirming enrollment
6-Organizing Bone mineral density testing
   - (if one had not been performed in the previous twelve months)
7-Booking Metabolic Bone Disease Clinic appointment

Ontario Osteoporosis Strategy

Inpatients

1-Contacting
   • unit pharmacist
   • dietician
   • orthopaedic resident
     • initiate vitamin-D (800 IU daily)
     • calcium (500 mg twice daily)

2- Organizing antiresorptive therapy
   • Metabolic Bone Disease Clinic
   • orthopaedic surgeon
   • Resident

Ontario Osteoporosis Strategy

Inpatients

If incomplete:

3- Organizing FU
   • Metabolic Bone Disease Clinic within two to three months
   • coordinator at their outpatient fracture clinic follow-up visit

4-Notifying Family Physician after 6 months
   • supplements and any pharmacotherapy that were initiated

Ontario Osteoporosis Strategy

Education

• Orthopaedic residents
  • educational materials (first week rotation)
• regular contact with the program coordinator

Ontario Osteoporosis Strategy

Evaluation

Initial consultation after confirmation inclusion in the program

Data collection
Gender
Age
Mechanism of injury
Fracture site
Hx diagnosis and treatment of osteoporosis,
Referral pattern
Diagnosis and treatment of osteoporosis

Ontario Osteoporosis Strategy

Baseline questionnaires (outpatients and inpatients voluntary basis)
  • hospital visit
  • hospital stay
  • later at home (mailing it back)
• Hx fractures and other risk factors for osteoporosis
• sociodemographic characteristics
• health beliefs relating to osteoporosis
• Osteoporosis Self-Efficacy Scale*
• Consent implied if the patient completed and returned questionnaires

Follow-up questionnaire (mailed at six months )
  • rates of referral to and attendance at the Metabolic Bone Disease Clinic
  • patients’ knowledge of the BMD results
  • compliance with treatment
  • New fragility fractures at any site
  • health beliefs and self efficacy related to osteoporosis.


Coordinator

Further intervention initiated (identified needs in questionnaire)

Appointment rescheduling

Encouraging patient to pursue osteoporosis investigation and treatment

National Osteoporosis Society (NOS)
FLS Standards

FLS Coordinators

Effect the 5IQ **approach**

Identification
Investigation
Information
Intervention and Integration
Quality

```
Staffing levels will vary depending on the expected number of fractures being reviewed by the FLS. However, **single practitioner services are discouraged due to issues with continuity of service that arise during leave.**` (p.36)
```
Standardized Order Set
Agreement between physicians’ and nurses’ clinical decisions for the management of the fracture liaison service (4iFLS): the Lucky Bone™ program

A. Senay, J. Delisle, J. P. Raynauld, S. N. Morin & J. C. Fernandes
Order Set

- 1\textsuperscript{st} "i" (identification)
  - Emergency (ED) and out patient clinic (OC) nurses

- 2\textsuperscript{nd} and 3\textsuperscript{rd} "i" (investigation and initiation of treatment)
  - Medical Day Unit (MDTU) nurses
Order Set

Initiate treatment

Calcium 500 mg po BID
Vitamin D 10 000 iu po 1 per week
+ 
Oral bisphosphonates
Results

Rates of FF identification per month over 9 months

Heart Attack = beta blocker
costipation = docusate
fragility fracture = antiresorptive therapy
Order Set

Order set applied $\rightarrow$ 70%
Order set not applied $\rightarrow$ 30% (standard care)

FLS studies

- 60-80% ID rates with dedicated manager
Nurses • Yes, they can!

Feedback + training + part of routine practice

Clear hospital policy and guidelines of care

Order Set
• IT team= Identify patients at risk!!!
• Just in time consultation
  • Offered on site after patient’s DXA
  • Consults range from 20-40 minutes
  • Based on DXA results, tech sends patient **to the NP/PA**
    • Osteoporosis by T-score
    • Osteopenia high FRAX
    • Fragility fracture
    • High risk group
Fracture prevention in Kaiser Permanente
Southern California

R. Dell

Abstract
The Kaiser Permanente Healthy Bones Program has used a systematic approach to address the osteoporosis/fracture care gaps. The article discusses the ten-step processes that utilize information technology and care managers to identify, risk stratify, treat, and then track our patients with care gaps. This program has led to 40+% reduction in the expected number of hip fractures in 2009 that we attribute to the increase in DXA screening followed by appropriate osteoporosis treatment.
Challenges & Solutions!
Challenge

1st i - ESSENTIAL FLS SUCCESS!!

Identification at risk patients
Solution

• IT List- Pop Up
• Hospital Policy
• Standardized Algorithm
• Involved radiology department (vertebral fractures)
Challenge

1st i - ESSENTIAL FLS SUCCESS!!

Patients’ refusal
Solutions

Staff education

Patient’s education
Challenge

2\textsuperscript{nd} i Challenges

Mis-interpretation of FRAX
- Over and under treating based on fracture risk

Basing risk on T score alone!

Lisa Voss PA-C, MHS, CCD
Laura Frontiero FNP-C, MSN, CCD
FLS Care Coordination. Interdisciplinary Symposium on Osteoporosis (ISO14) in New Orleans, Louisiana, April 23-26, 2014.
Solutions

Medical Staff education
Challenges

3rd i Challenges

Initiation of treatment

- Orthopaedist responsibility (they don’t think so)
- Primary care physician often unaware of fracture
- Ignoring osteoporosis (DEXA-osteopenia)
- Taking patients off meds prematurely (fear Severe side effects)
- Not trying alternative therapy options
- Adherence to treatment
Solutions

Address Fear

Staff education

Patient’s education
Solutions
Afterwards....

EVALUATE your FLS
NOS Standards

Evaluate....

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>RATIONALE</th>
<th>MEASURES</th>
<th>OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Management plans will be patient-centred and integrated between primary and secondary care.</td>
<td>Effective communication is essential to ensure that long-term management is achieved and that patients are supported to engage with recommended interventions.</td>
<td>Measure of communication including % of patients copied in to FLS letters.</td>
</tr>
<tr>
<td>7</td>
<td>Patients who are recommended drug therapy to reduce risk of fracture will be reviewed within 4 months of initiation to ensure appropriate treatment has been started, and every 12 months to monitor adherence with the treatment plan.</td>
<td>Treatments must be taken consistently and appropriately over many years to be effective. Follow-up allows early identification of issues (side effects, compliance) with prescribed medications, reinforces need to take treatments and supports long-term concordance.</td>
<td>% of patients recommended drug therapy who have initiated treatment by 4 months following fracture. % of patients on treatment who have been reviewed within the last 12 months.</td>
</tr>
</tbody>
</table>

Quality

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Core clinical data from patients identified by the FLS will be recorded on a database. Regular audit and patient experience measures will be performed and the FLS will participate in any national audits undertaken.</td>
<td>Data recorded will allow the FLS to audit and improve the service they provide ensuring that high standards are met and maintained. Initial data will provide a baseline from which improvements can be assessed.</td>
<td>Date of last audit against FLS standards. Date of last patient satisfaction survey.</td>
</tr>
<tr>
<td>9</td>
<td>The FLS team will have appropriate competencies in secondary fracture prevention and will maintain relevant Continued Professional Development (CPD).</td>
<td>All staff need appropriate knowledge, skills and experience to fulfil their role. Engagement with relevant CPD activities ensures that these are up to date.</td>
<td>Review of competences and training needs in annual appraisals. Assessment of CPD attained.</td>
</tr>
<tr>
<td>10</td>
<td>The FLS should engage in a regular peer-review process of quality assurance.</td>
<td>Clinical peer review facilitates quality standard assurance, equitable access to services, and provides a means of benchmarking and sharing best practice.</td>
<td>Date of last peer review and progress against an agreed action plan.</td>
</tr>
</tbody>
</table>

https://staging.nos.org.uk/media/1776/clinical-standards-report.pdf
Evaluate....

PDSA (Plan-Do-Study Act): IOF, NOS, OC
Where do we start???
Capture the Fracture®

• A global flagship programme by the International Osteoporosis Foundation (IOF)

• Launched in 2012

• Mission: facilitating the implementation of FLS to prevent secondary fractures.
## Key Aims

<table>
<thead>
<tr>
<th>Aims</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be the global voice</td>
<td>Provide support for FLS implementation, getting started &amp; improving</td>
</tr>
<tr>
<td>Drive national/international policy</td>
<td>Ensure quality</td>
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</table>

The slide highlights the following key aims:
- Be the global voice
- Drive national/international policy
- Ensure quality
- Provide support for FLS implementation, getting started & improving
Best Practice Framework - health care quality

Aim:
1. Set the standard for FLS
2. Guidance
3. Benchmarking and Quality improvement
### Criteria and Standards

<table>
<thead>
<tr>
<th>1. Patient Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Patient Evaluation</td>
</tr>
<tr>
<td>3. Post Fracture Assessment Timing</td>
</tr>
<tr>
<td>4. Vertebral Fracture (VF) ID</td>
</tr>
<tr>
<td>5. Assessment Guidelines</td>
</tr>
<tr>
<td>6. Secondary Causes of OP</td>
</tr>
<tr>
<td>7. Falls Prevention Services</td>
</tr>
<tr>
<td>8. Multifaceted Assessment</td>
</tr>
<tr>
<td>9. Medication Initiation</td>
</tr>
<tr>
<td>10. Medication Review</td>
</tr>
<tr>
<td>11. Communication Strategy</td>
</tr>
<tr>
<td>12. Long-term Management</td>
</tr>
<tr>
<td>13. Database</td>
</tr>
</tbody>
</table>

#### Standard 1 definition:
Fracture patients are identified to enable delivery of secondary fracture prevention

<table>
<thead>
<tr>
<th>Standard</th>
<th>Bronze</th>
<th>Silver</th>
<th>Gold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Identification</td>
<td>Patients identified, <em>not</em> tracked</td>
<td>Patients identified, <em>are</em> tracked</td>
<td>Patients identified, tracked &amp; independently reviewed</td>
</tr>
</tbody>
</table>
SCORING: 5 domains

- Hip fracture
- Other inpatient
- Outpatient
- Vertebral
- Organizational (Falls/database)
Running an FLS?
Join the Capture the Fracture® Programme

Why join?

- Showcase your achievements
- Learn from the BPF to improve your service
- Get international recognition with a Gold, Silver, or Bronze star
- Be part of a global initiative to prevent secondary fractures

Who can participate?

- Coordinator-based models of care
- All type of facilities
- At any stage in development
- Any size worldwide
The Process

Step 1
FLS submits online application

Step 2
FLS marked in green on the map while being reviewed

Step 3
BPF achievement level assigned

Step 4
FLS is scored and recognized on the map

https://youtu.be/gpAAvvukjQw
247 FLS, 37 countries, 6 continents
Take home message

It doesn’t matter how you get there; Just get there!

-Scottie Somers
Thanks to our CTF sponsors

Inspired by patients.
Driven by science.

AMGEN®
Acknowledgements

On behalf of IOF and the CTF steering committee, we thank you for your participation in this webinar.

If you have any additional questions, comments or feedback please email capturethefracture@iofbonehealth.org