
بسم الله الرحمن الرحیم

Prevention of Fracture

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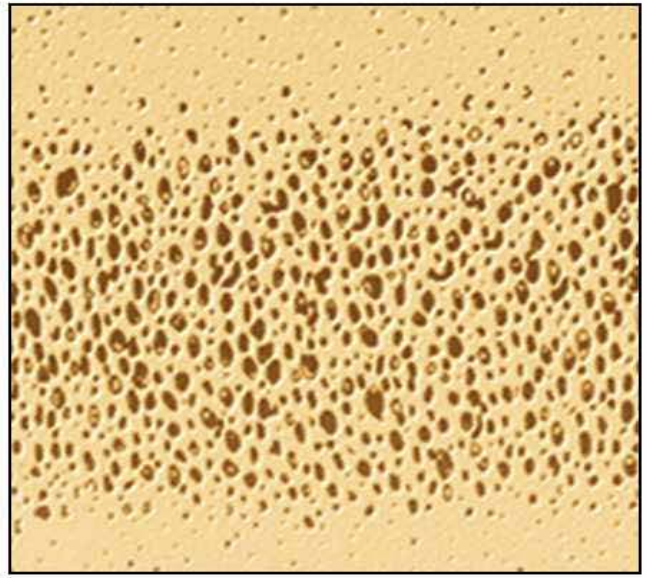
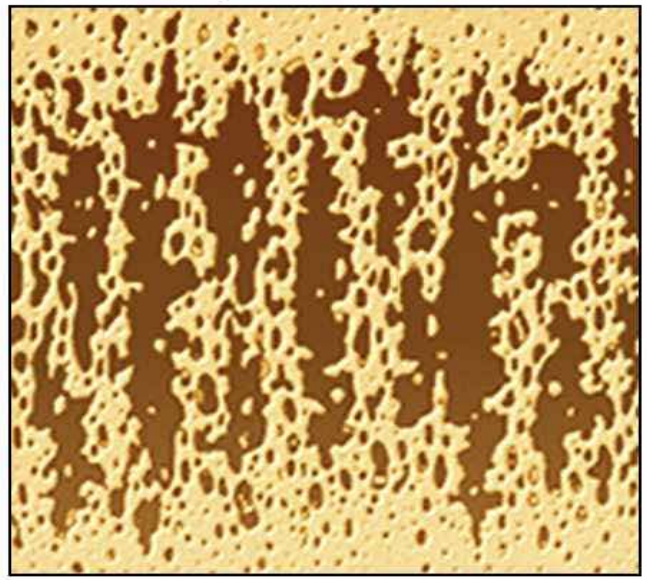
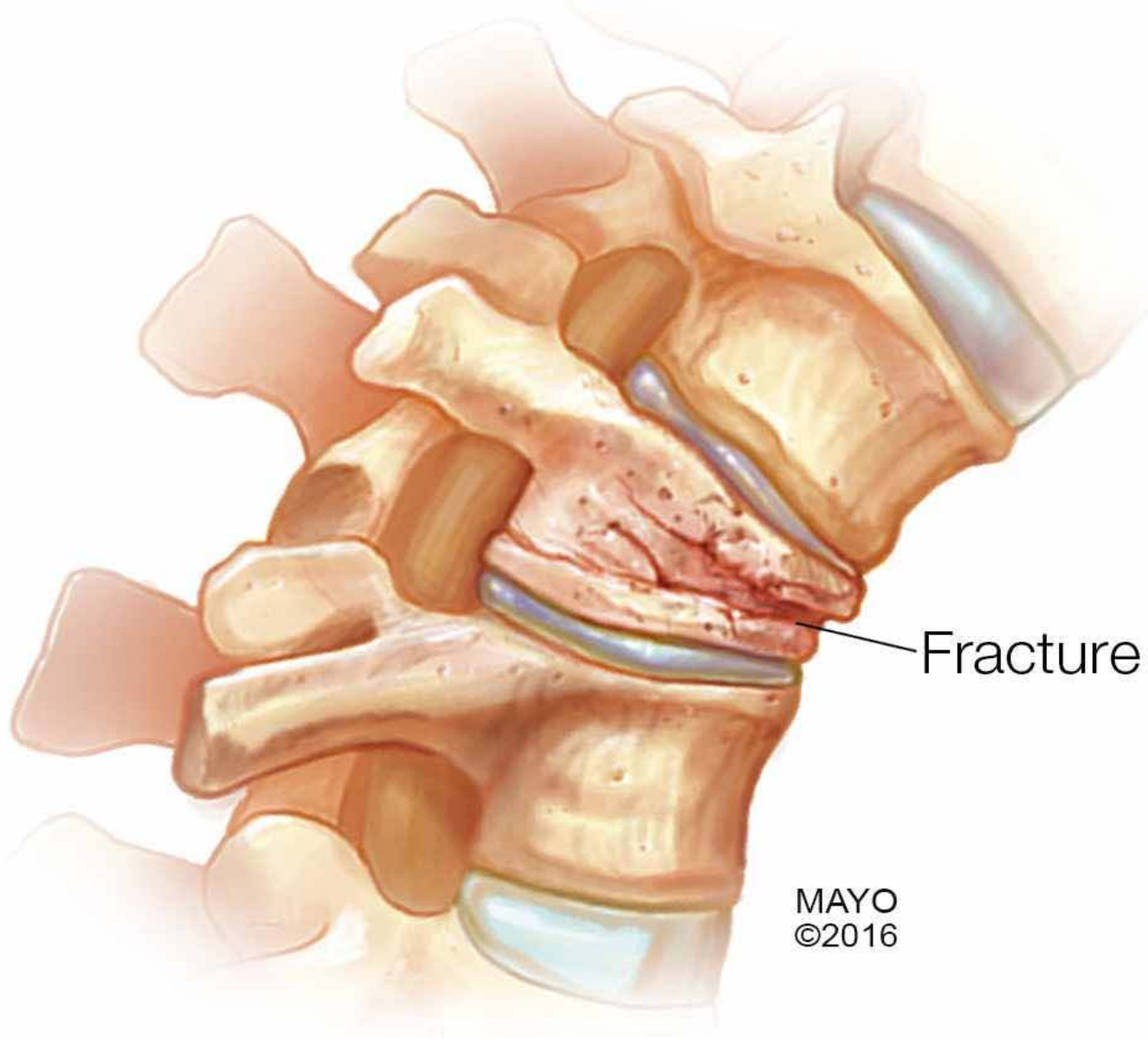
Normal bone



Osteoporotic bone





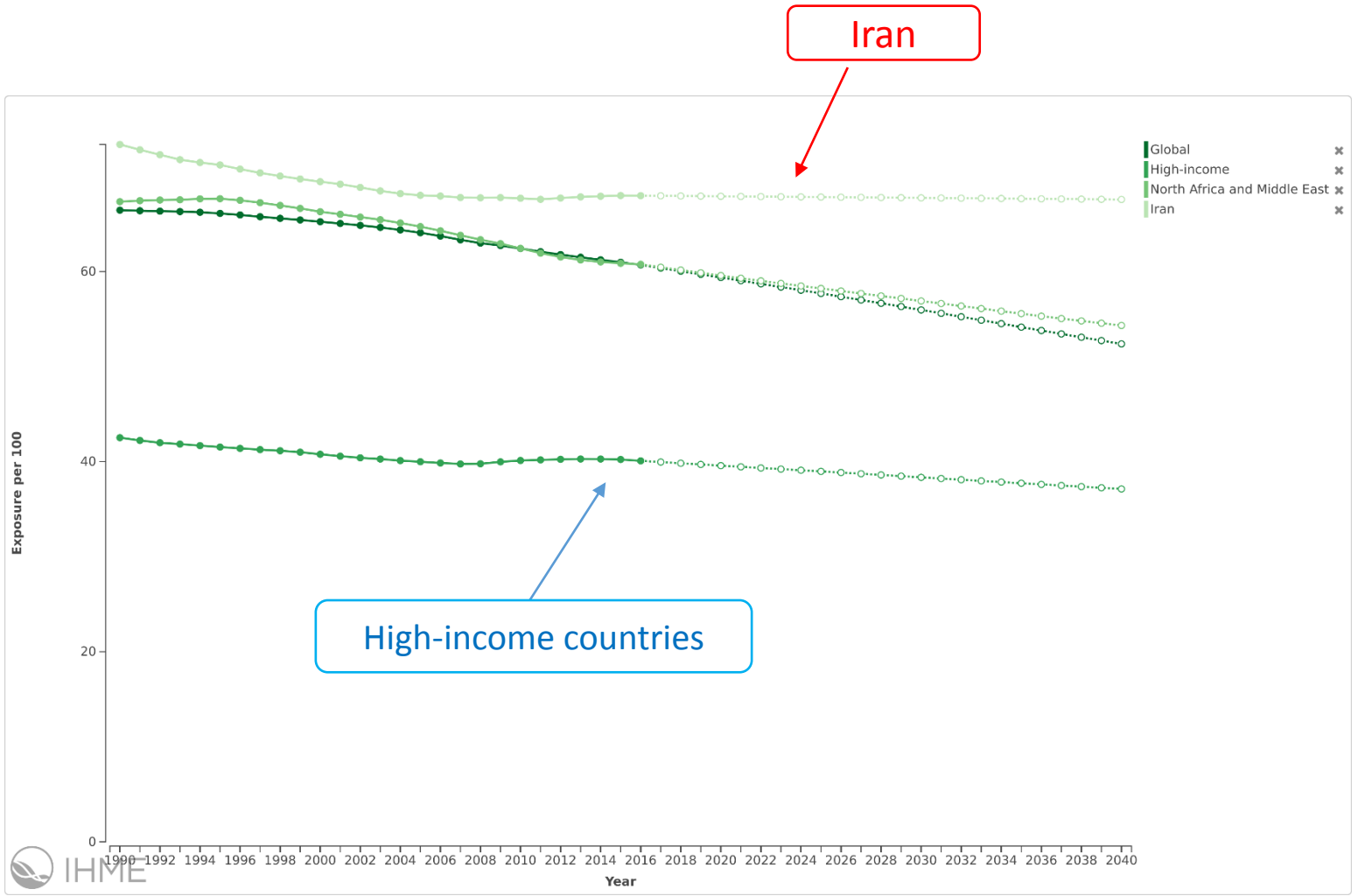
Determinants of peaks bone mass

Several variables, more or less independent, are supposed to influence bone mass accumulation during growth;

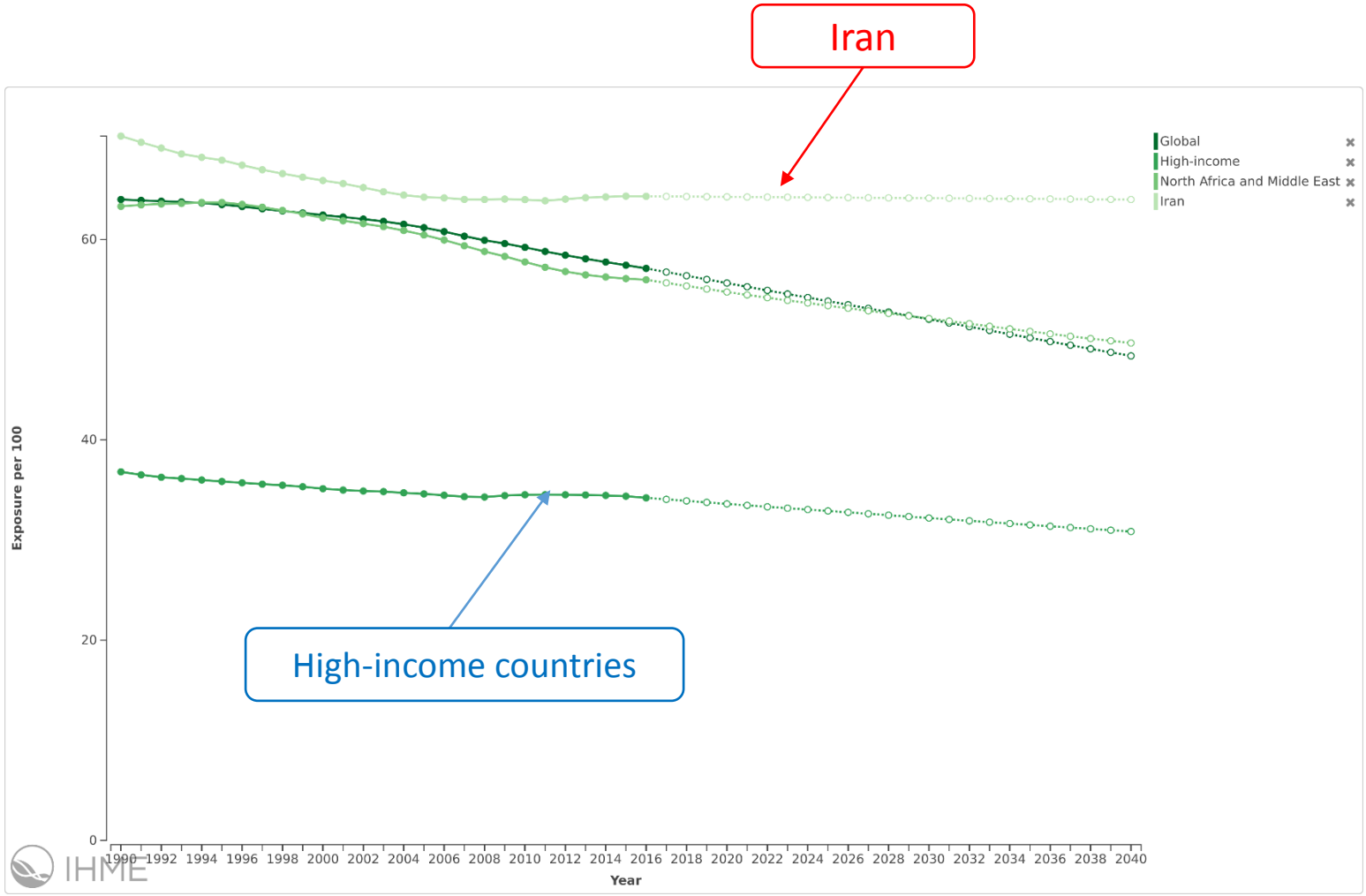
- Heredity, sex, dietary components, endocrine factors, mechanical forces, and exposure to risk factors.

    - With respect to nutrition, the quantitative importance of calcium intake in bone mass accumulation during growth, particularly at sites prone to osteoporotic fractures, remains to be clearly determined.

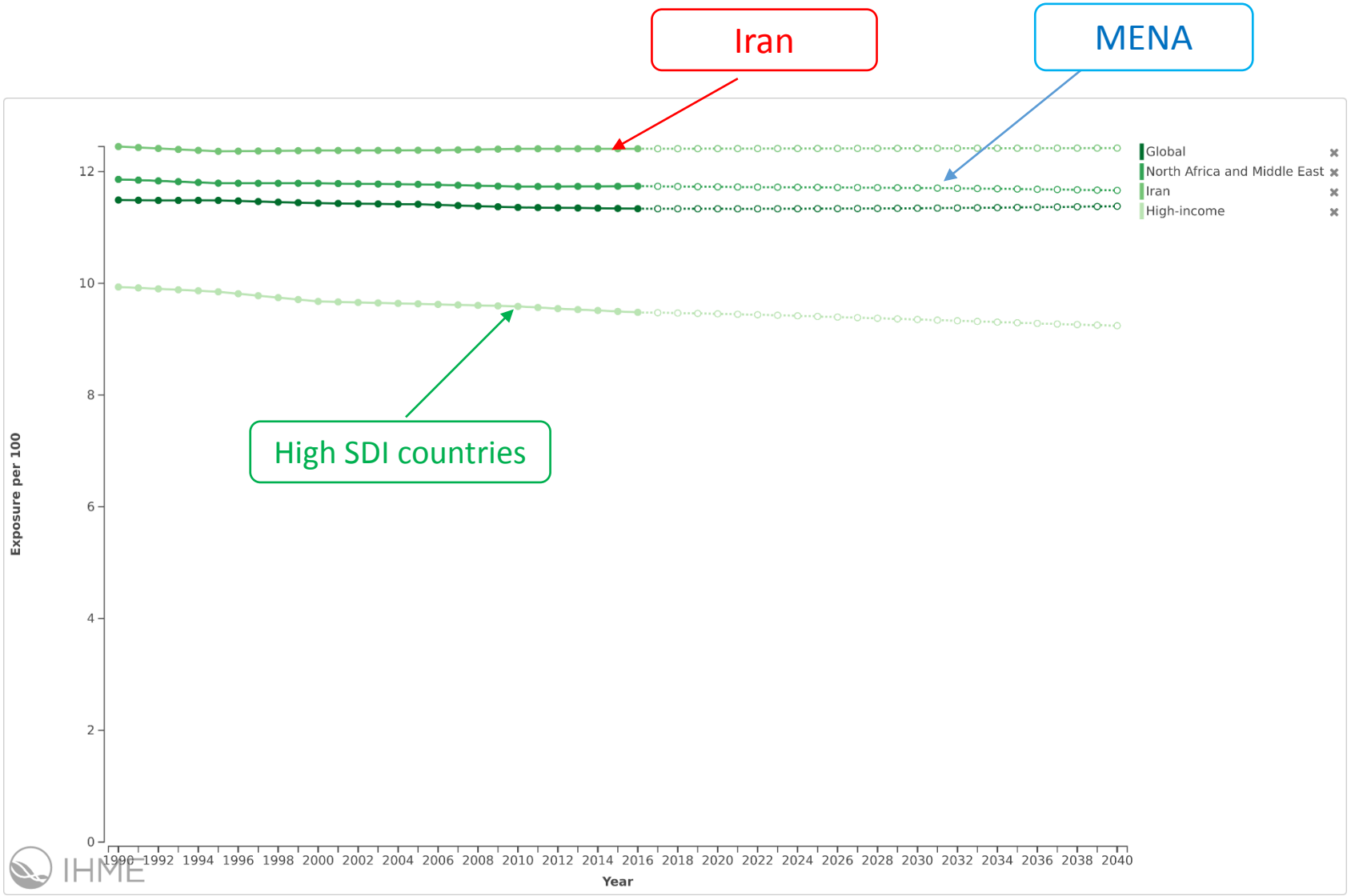
Low calcium in Diet-Female



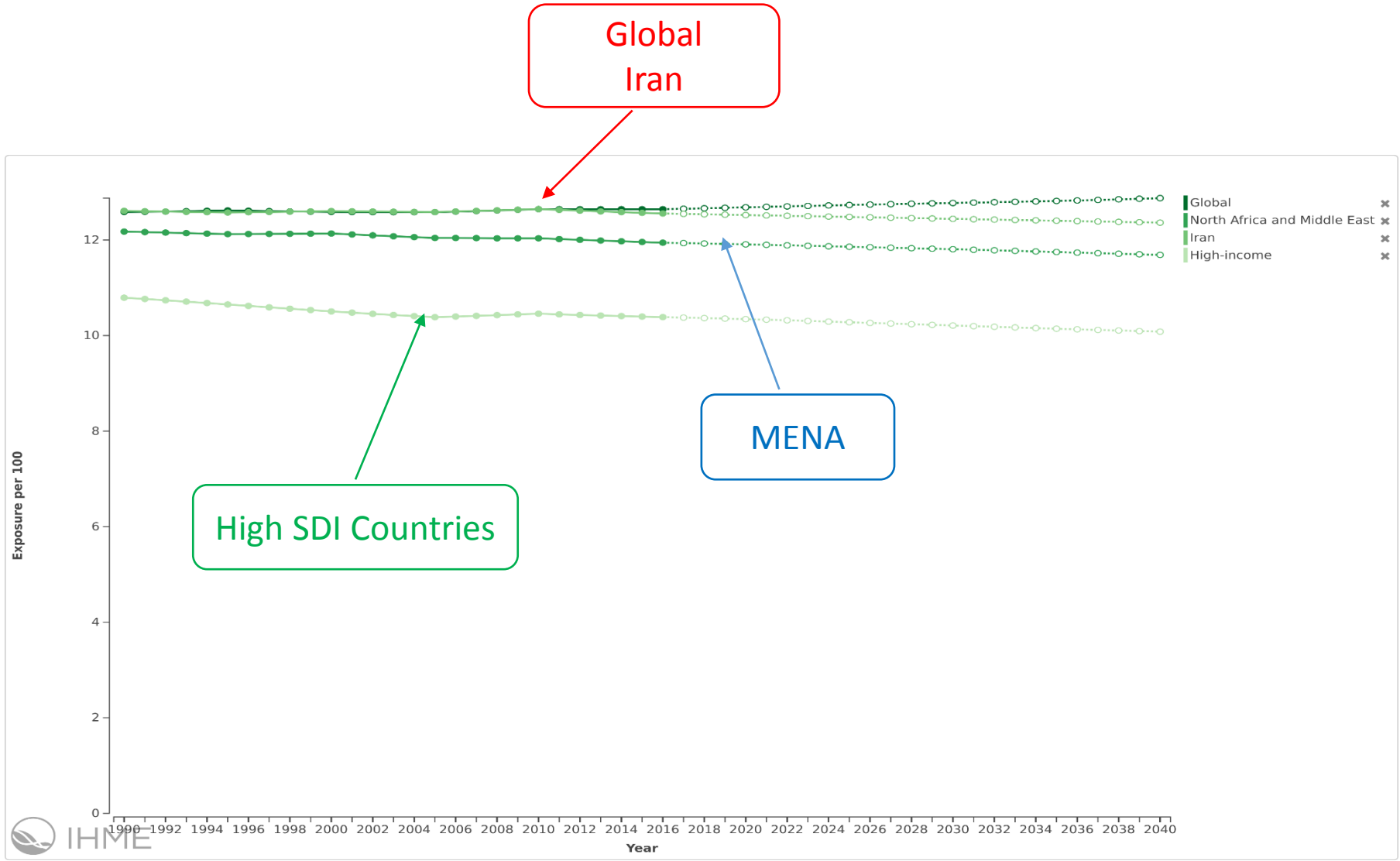
Low calcium in Diet-Men



Low Bone Mineral Density in Men



Low Bone Mineral Density in women



IHME

The prevalence of Osteoporosis

The result of a meta analysis in 2017 showed:

- 50 articles with 38161 post menopausal women were included

- The prevalence of osteoporosis:
    - In Lumbar spine: 21% (95% CI: 17-26)
    - In femoral neck: 25% (95% CI: 19-31)
    - In total hip: 21% (95%CI: 17-26)

- The prevalence of osteopenia: 51% (95%CI: 42-61)

Fragility Fractures Are No Accident

The underlying cause is osteoporosis

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The Burden of Fragility Fractures

Fragility fractures are common

- 1 in 3 women and 1 in 5 men over 50 years of age. One fracture every 3 seconds.

Fractures are costly

- **EU:** estimated costs of 32 billion EUR per year
- **USA:** costs of 20 billion USD per year

Fractures affect quality of life

- Functional decline, loss of independence
- Mortality

FRAGILITY FRACTURES

- In white women, the lifetime risk of hip fracture is 1 in 6, compared with a 1 in 8 risk of a diagnosis of breast cancer. A woman's risk of a hip fracture is equal to her combined risk of breast, uterine and ovarian cancer

- By 2050, the worldwide incidence of hip fracture in men is projected to increase by 310% and 240% in women

After hip fracture:

- An average of 24% of hip fracture patients aged 50 and over die in the year following their fracture
- At six months after a hip fracture, only 15% of hip fracture patients can walk across a room unaided

One Fracture

More Fractures

Why the First Fracture is so Important

- 1st fracture doubles the risk for future fractures
- 2nd fracture often happens within 6-8 months

A Missed Opportunity ent Secondary

- Half
- tered
- ture.

50% of all hip fractures come from 16% of the postmenopausal women with history of fracture

Wrist and vertebral fractures are common first fractures

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We know the problem.....

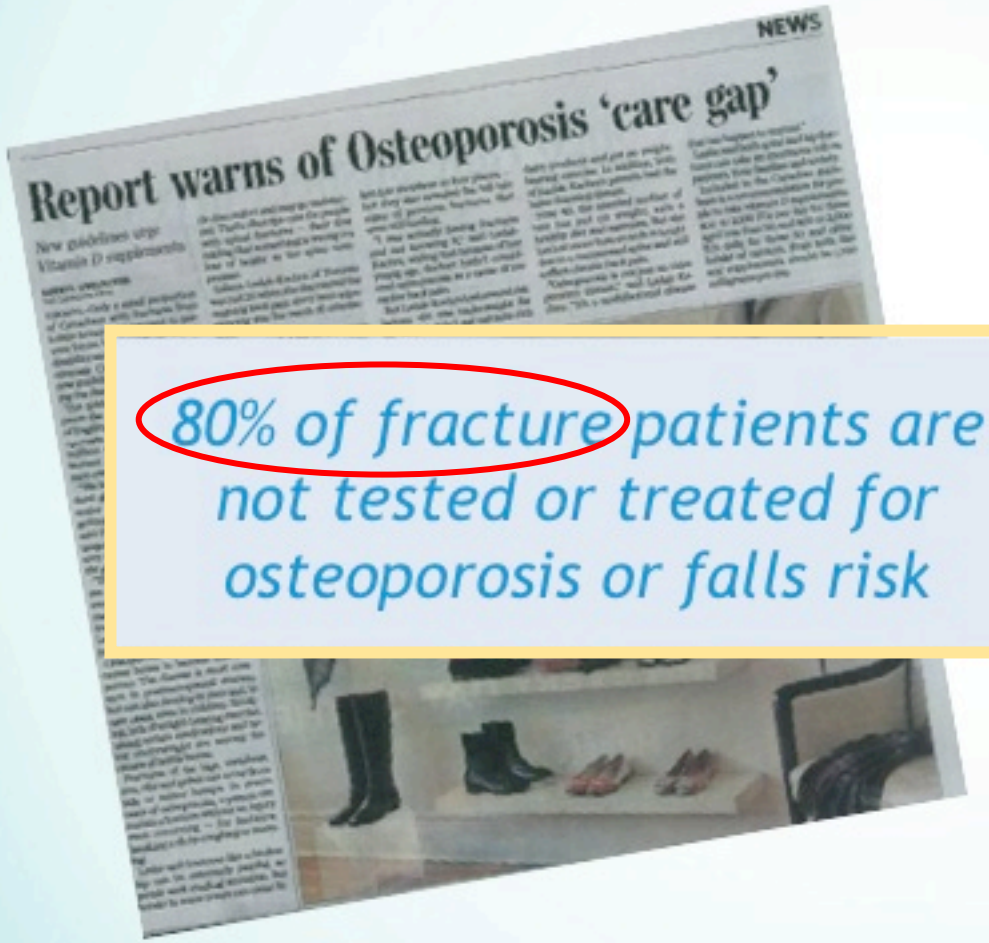
The Fracture Cascade + **The Care Gap**

One Fracture

More Fractures

Healthcare systems around the world are failing to capture the fracture…and prevent the second fracture.

The Worldwide Care Gap


NEWS

Report warns of Osteoporosis 'care gap'

New guidelines urge Vitamin D supplements

80% of fracture patients are not tested or treated for osteoporosis or falls risk

Fragility fracture patients:

- Fail to have risk assessed
- Remain untreated
- Lack prescriptions
- Are not diagnosed
- Break another bone

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...and the time to act is at the first fracture

A fragility fracture in patients 50 years or over **signals the need for further testing and possible treatment**

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Falls and Fragility Fractures should:

- Focus on the **three priorities for optimization**
  - **Falls prevention**
  - **Detecting and Managing Osteoporosis**
  - **Optimal support after a fragility fracture**

- Work across the system to ensure that schemes to deliver the **higher value interventions** are in place
  - Targeted **case-finding** for osteoporosis, frailty and falls risk
  - **Strength and balance training** for those at low to moderate risk of falls
  - **Fracture liaison service** for those who have had a fragility fracture

Also Known as

- Fracture Liaison Services
  - (UK, Europe and Australia)
- Osteoporosis Coordinator Programmes
  - (Canada)
- Care Manager Programmes
  - (USA)

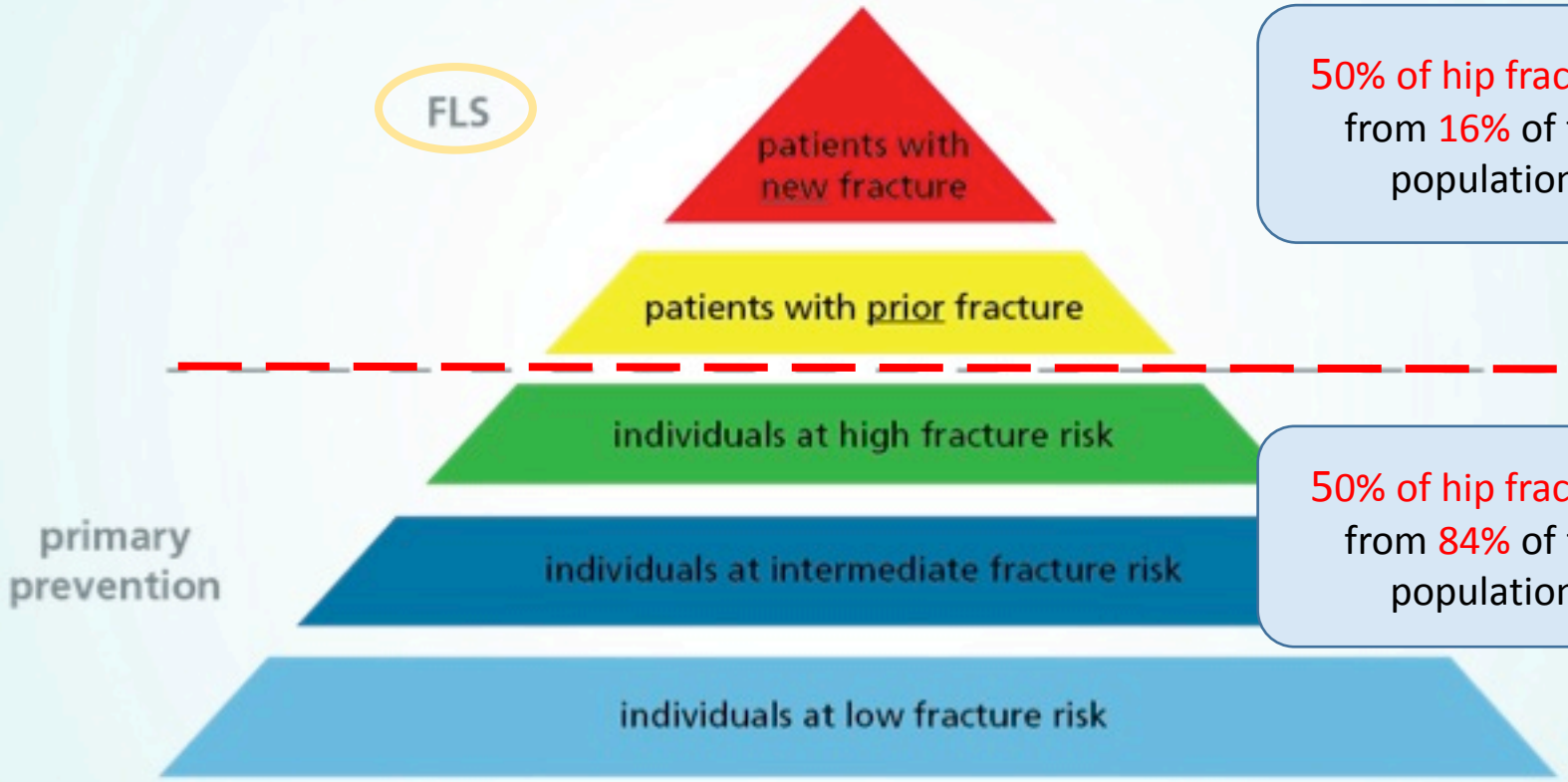
A Proven Solution

Fracture Liaison Services (FLS) Coordinator-based models of care

- facilitate risk assessment
- facilitate bone mineral density testing and osteoporosis education and care
- have been shown to be cost-saving

- As 50% of people who experience hip fracture have broken a bone in the past, FLS represents an ideal opportunity for intervention in the journey to avert that hip fracture

Identifying Patients



50% of hip fractures from 16% of the population

50% of hip fractures from 84% of the population

Adapted from Curr Med Res Opin 2005;21:4:475-482 Brankin E et al * BOA-BGS 2007 Blue Book. /http://www.nhfd.co.uk

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Fracture Liaison Service (FLS)

- A Fracture Liaison Service (FLS) systematically identifies, treats and refers to appropriate services all eligible patients aged over 50 years within a local population who have suffered a fragility fracture, with the aim of reducing their risk of subsequent fractures.

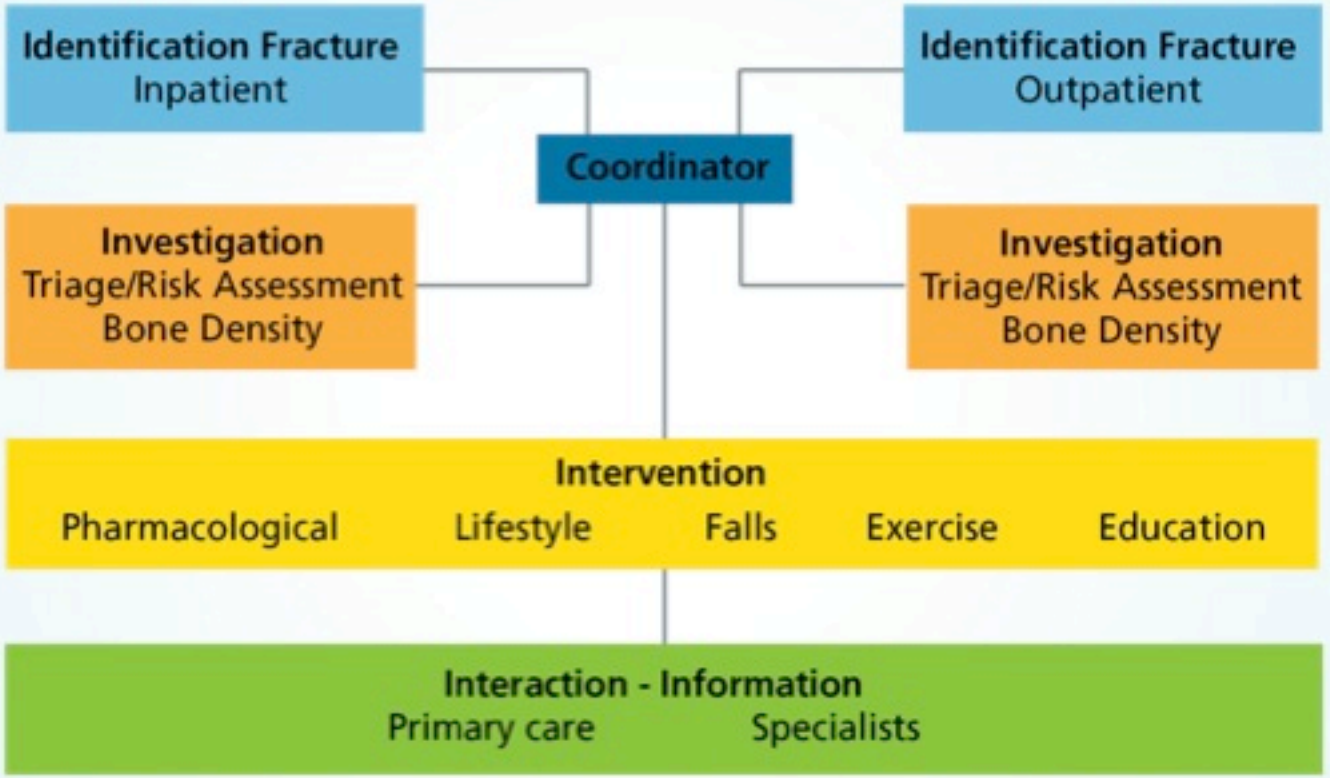
Aims

- Reducing emergency admissions / unplanned care
- Improving recovery from fragility fractures
- Reducing premature death from fragility fracture
- Managing long-term conditions/ adherence
- Reducing new fractures
- Care of vulnerable older people

Risk of further fracture in patients can then be minimized through:

- Appropriate use of medical treatments
- Appropriate use of supplements
- Simple changes to lifestyle to improve bone health
- Reducing the risk of falls, which can lead to fracture, through use of evidence-based interventions

Coordinator-based System



Adapted from McLellan et al OI 2003, 14:1028-1034.

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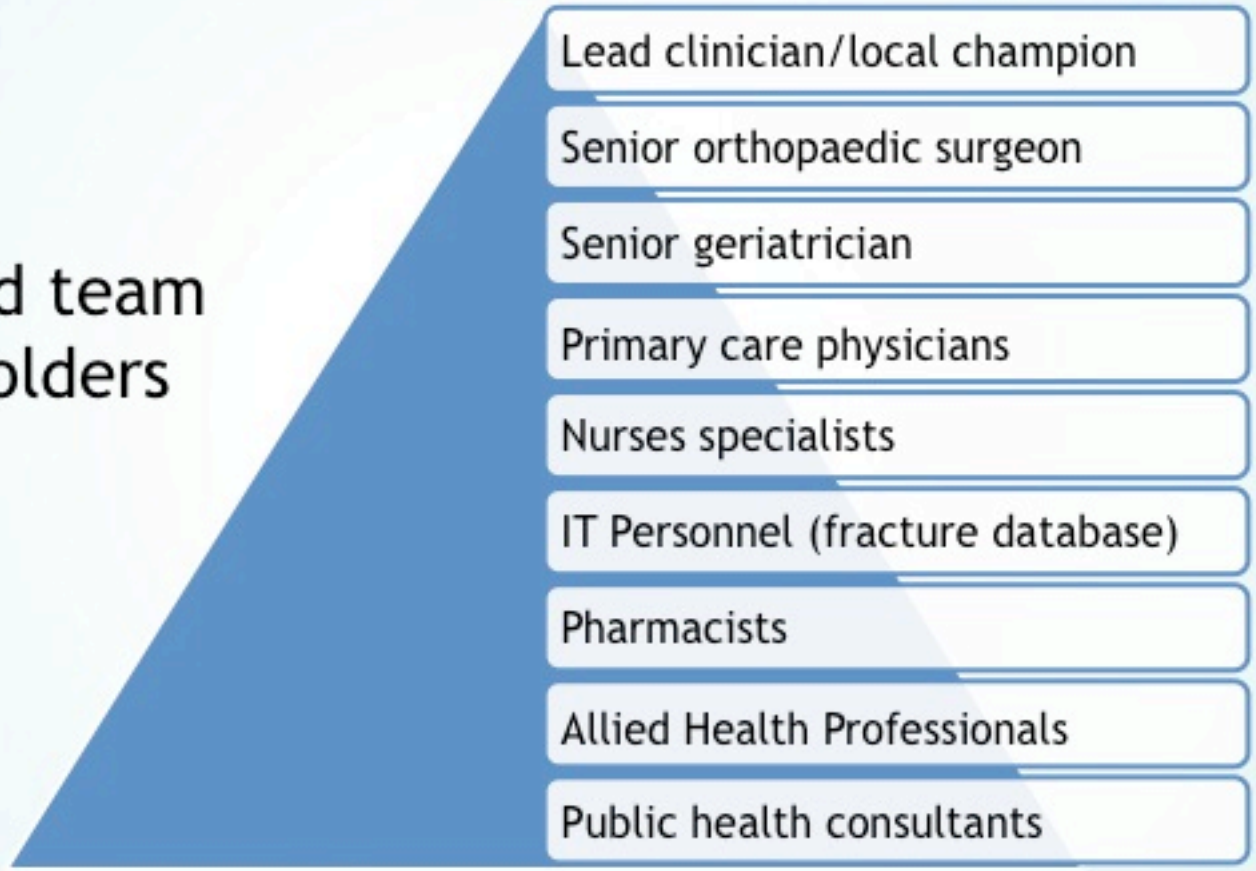
The Team

A dedicated team of stakeholders



5IQ – the smart way to achieve fracture prevention

Identify – finding patients with new, low-trauma fractures (at the time of fracture) who will benefit from investigation and, depending on outcome, possibly subsequent intervention; with the potential to extend scope to include identification of patients with prior fractures

Investigate – incorporating fracture risk assessment with dual-energy X-ray absorptiometry (DXA) to determine modifiable risk that merits intervention, tests to identify underlying causes of secondary osteoporosis, and assessment of falls risk

Inform – educating patients managed through the FLS about their falls and fracture risk and the benefits and risks of treatment

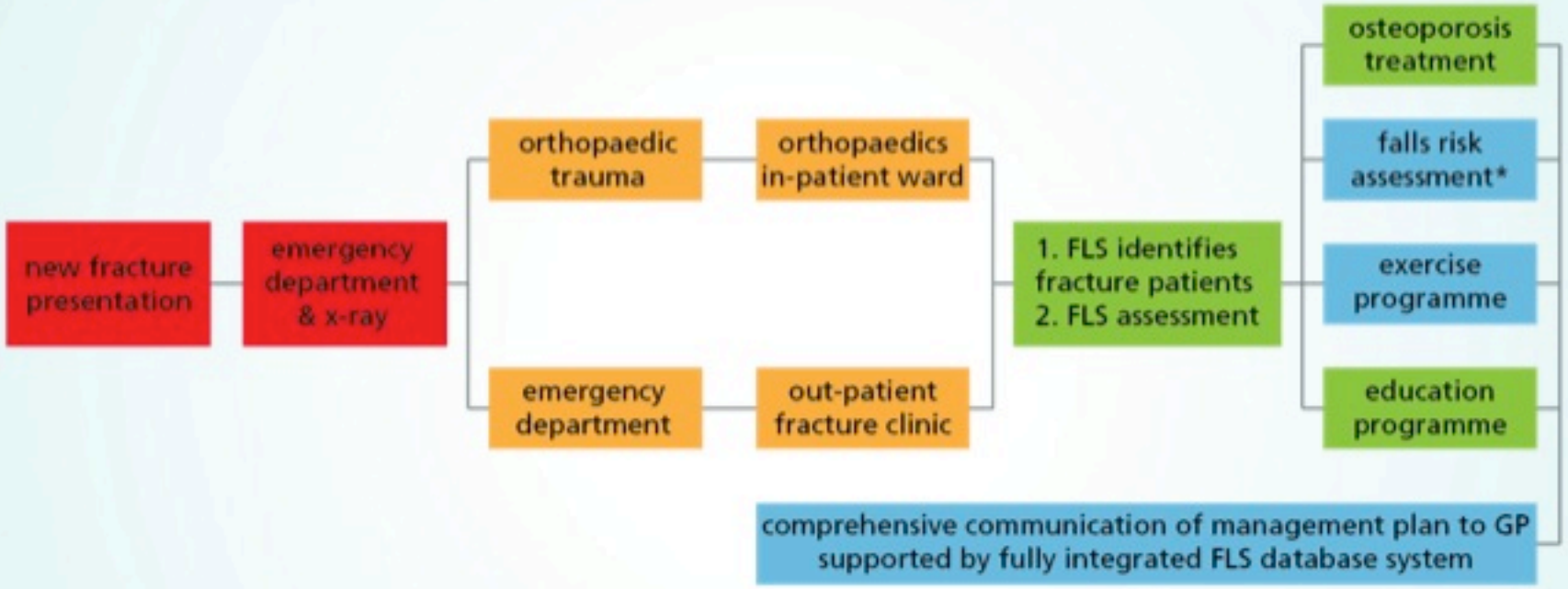
Intervene – implementing the necessary package of care, including drug treatments and non-pharmacological options for sustaining a reduction in secondary fracture risk and falls

Integrate – sharing patient-specific management plans with primary care clinicians and with other professionals involved in the patient's ongoing care plan, and ensuring long-term treatment concordance among patients

Quality – optimising the delivery and organisation of the Service through data collection and audit, continuing professional development (CPD), peer review and benchmarking.

These action points will be discussed in detail in the following pages.

The Structure



* Older patients, where appropriate, are identified and referred for falls assessment

1. British Orthopaedic Association, British Geriatrics Society. *The care of patients with fragility fracture* 2007.
2. McLellan AR, Gallacher SJ, Fraser M, McQuillian C. The fracture liaison service: success of a programme for the evaluation and management of patients with osteoporotic fracture. *Osteoporos Int.* Dec 2003;14(12):1028-1034.

IOF CAPTURE the FRACTURE

- Worldwide, there is a large care gap that is leaving millions of fracture patients at serious risk of future fractures.
- 'Capture the Fracture' hopes to close this gap and make secondary fracture prevention a reality.

THE NEED FOR SECONDARY FRACTURE PREVENTION

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International Osteoporosis Foundation

Capture the Fracture

A global campaign for the prevention of secondary fractures by facilitating the implementation of ***Fracture Liaison Services (FLS)***

www.capturethefracture.org

International Osteoporosis Foundation

Capture the Fracture

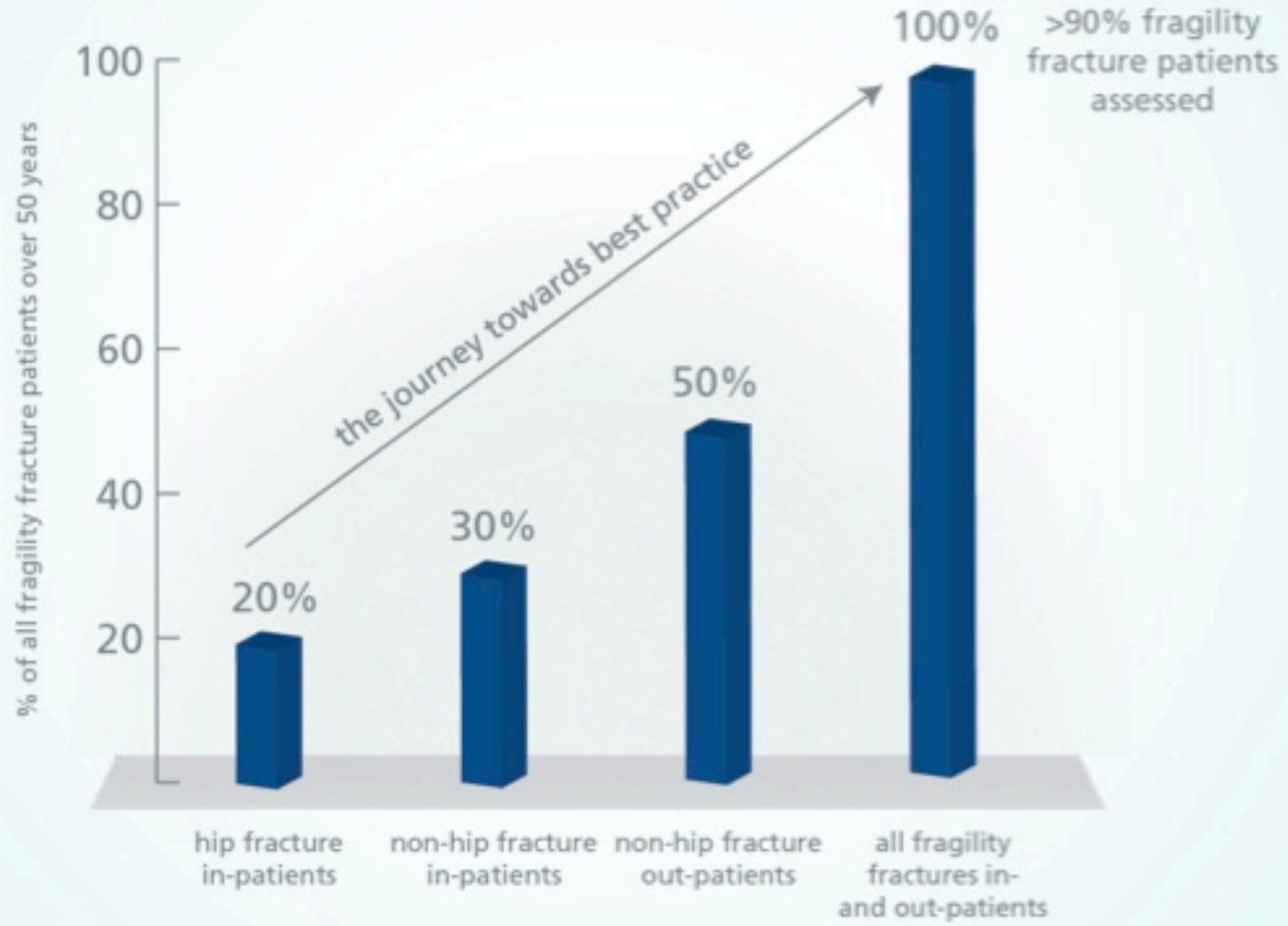
- An initiative of the International Osteoporosis Foundation (IOF)
- Launched in 2012
- www.capturethefracture.org

Key Objectives

- Set Standards
- Facilitate Change
- Create Awareness

for secondary fracture prevention

Outcome Targets: Reaching for best practice



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Purpose of the Best Practice Framework

13 internationally recognized & endorsed standards of care for secondary fracture prevention

1. Set the standard for FLS
2. Guidance
3. Benchmarking and fine-tuning

Recognizing Excellence: Awarding Certificates of Best Practice

- Graded FLS receive certificates and CtF Seals of Recognition reflecting the level of excellence obtained (gold, silver or bronze)

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The Best Practice Framework (BPF)

*Establishes **13** internationally recognized & endorsed standards of care for secondary fracture prevention*

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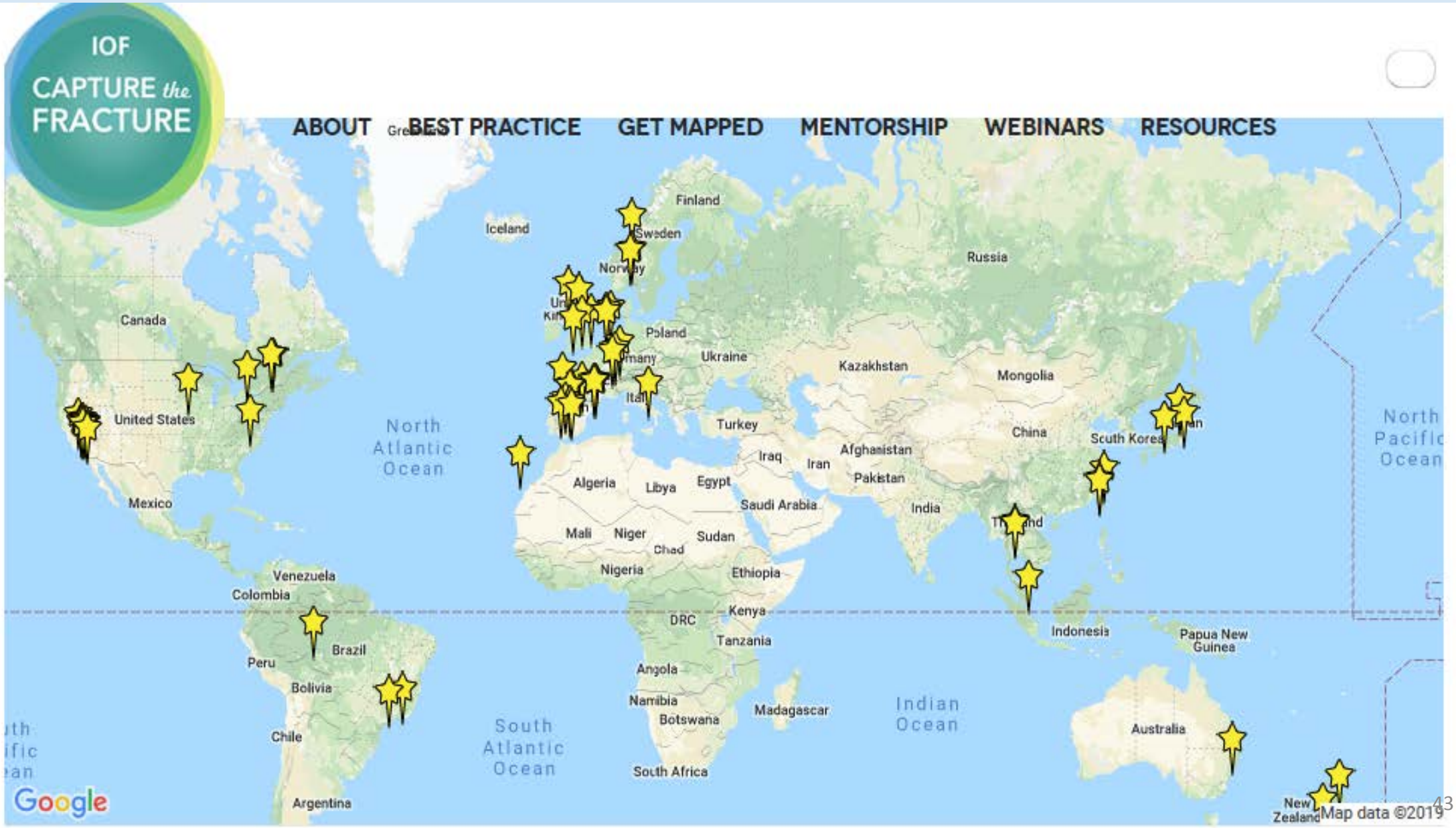
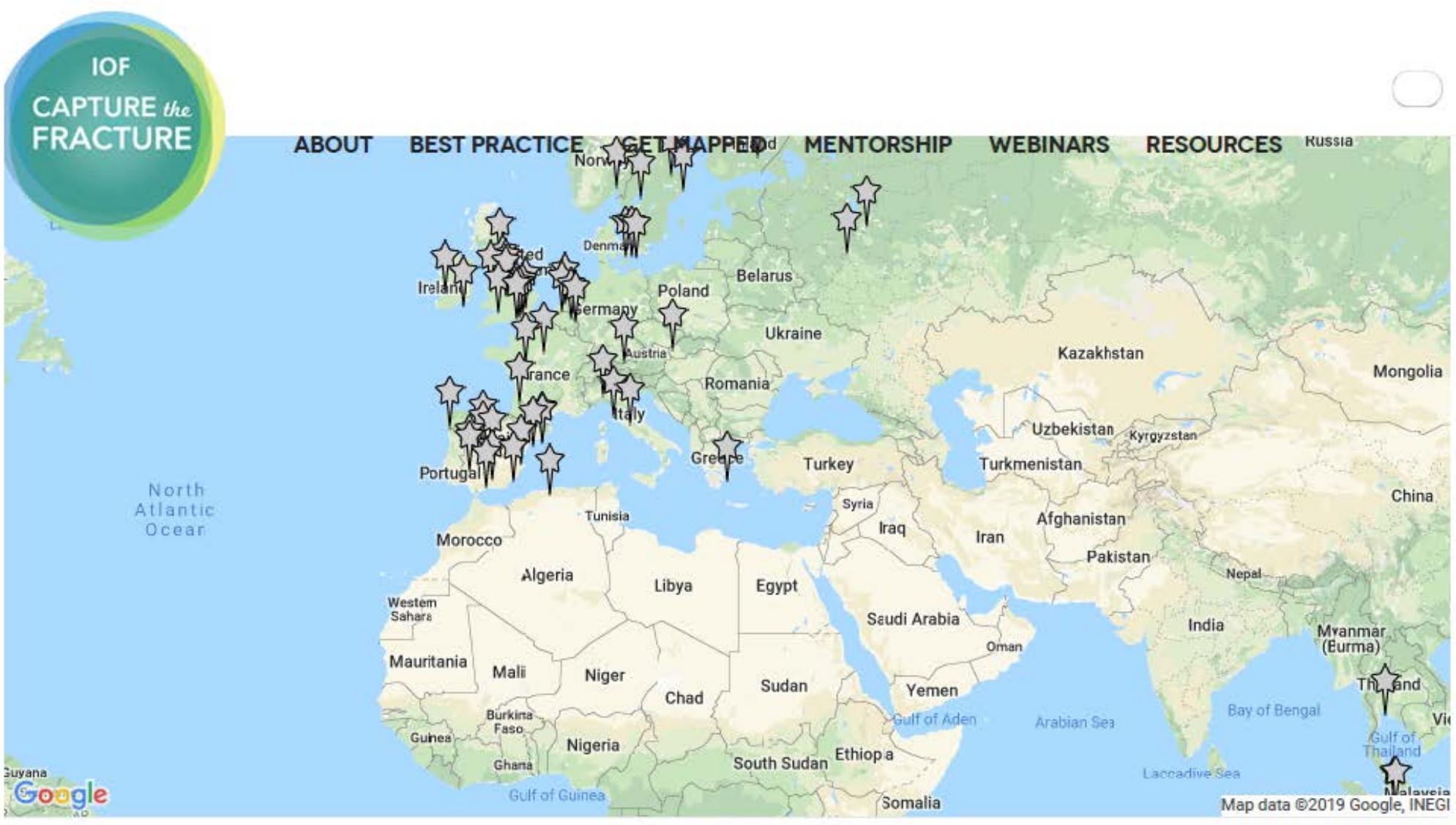
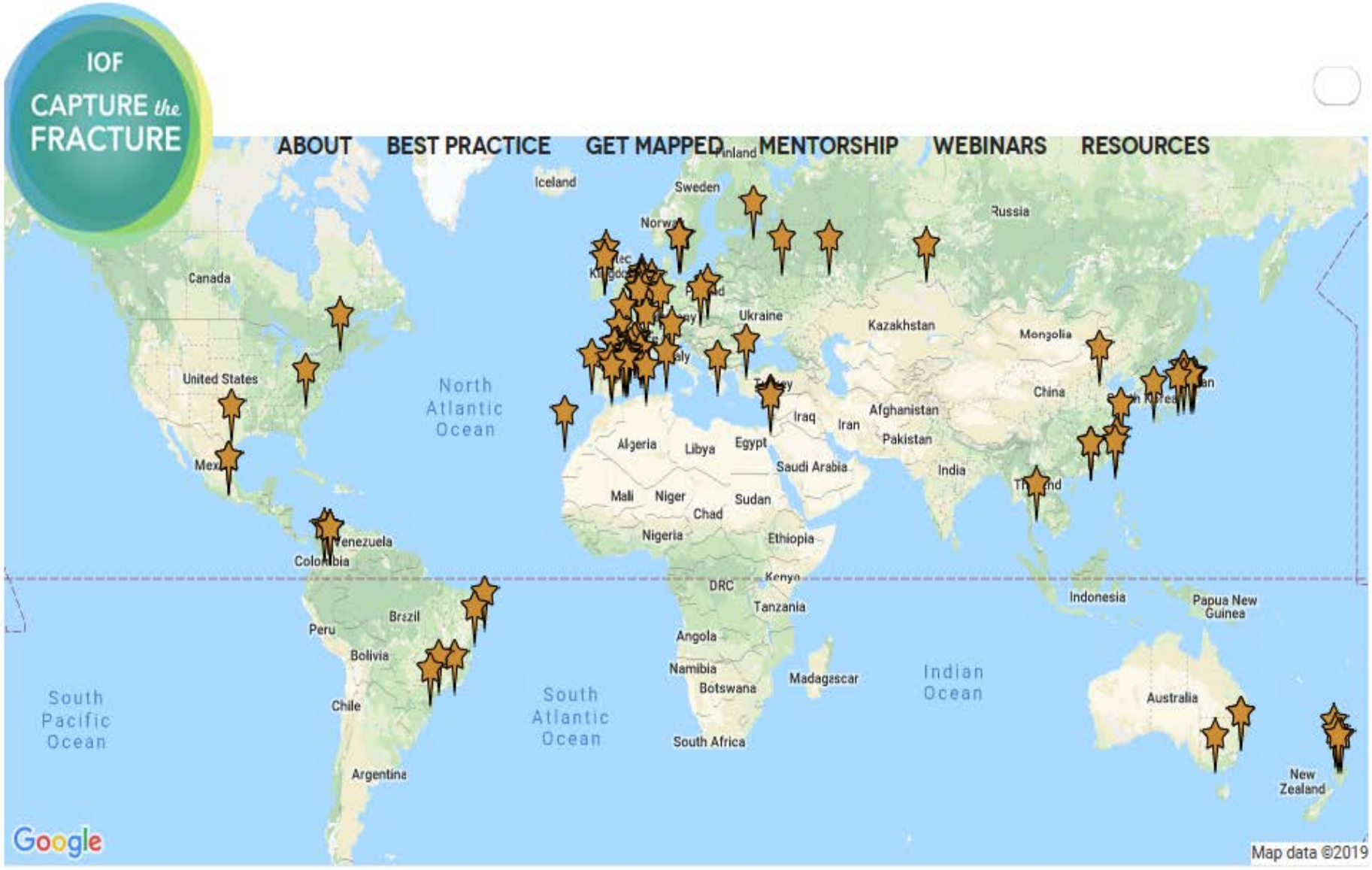
The map of GOLD medals-2019



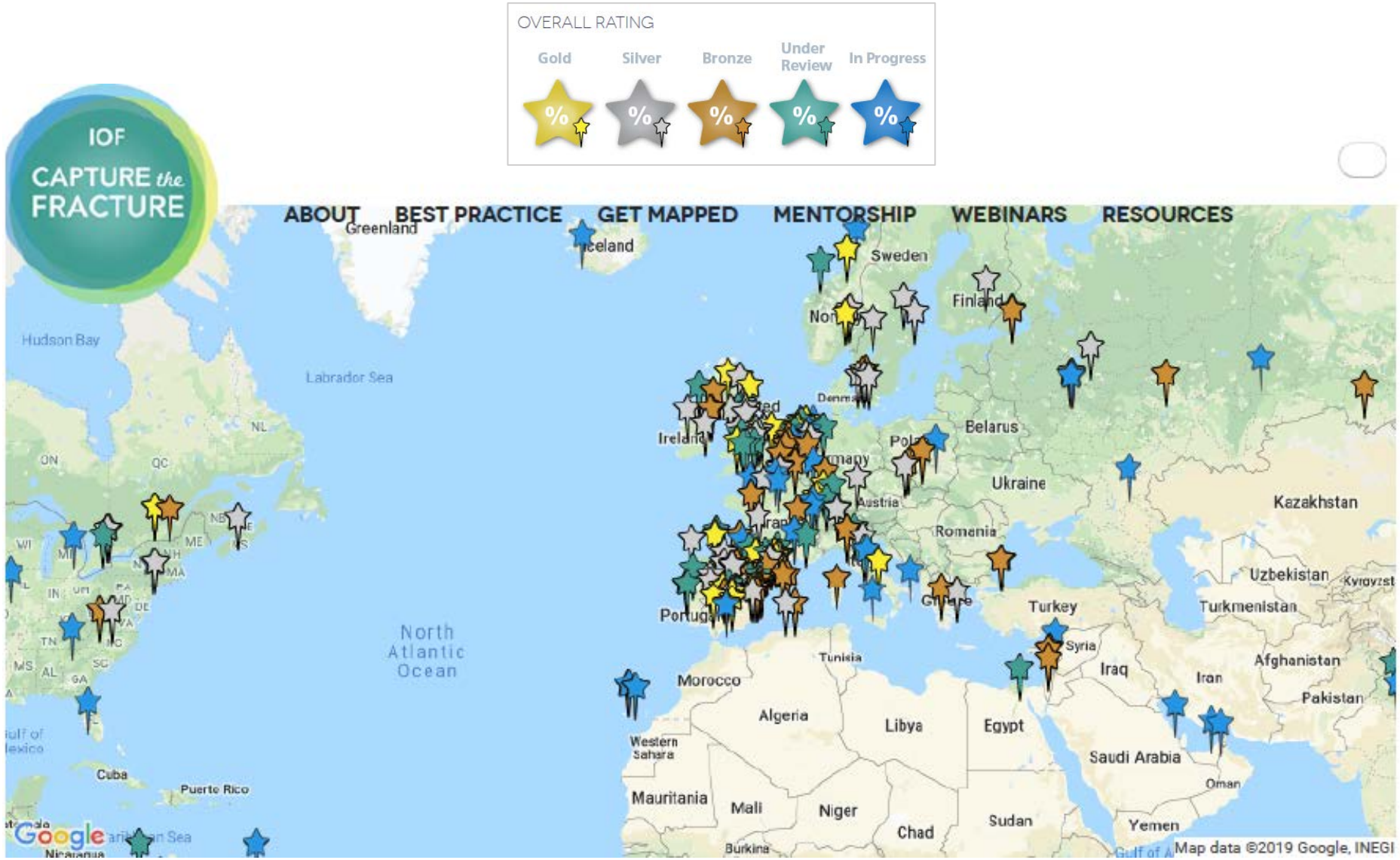
The map of Silver medals-2019



The map of Bronze medals-2019



The map of registered sites-2019



Bone 111 (2018) 92–100

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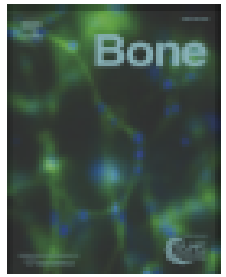


Full Length Article

Fracture liaison services improve outcomes of patients with osteoporosis-related fractures: A systematic literature review and meta-analysis

A total of 159 publications were identified including RCTs and observational studies

Compared with patients receiving usual care, patients receiving care from FLS, had higher rates of :

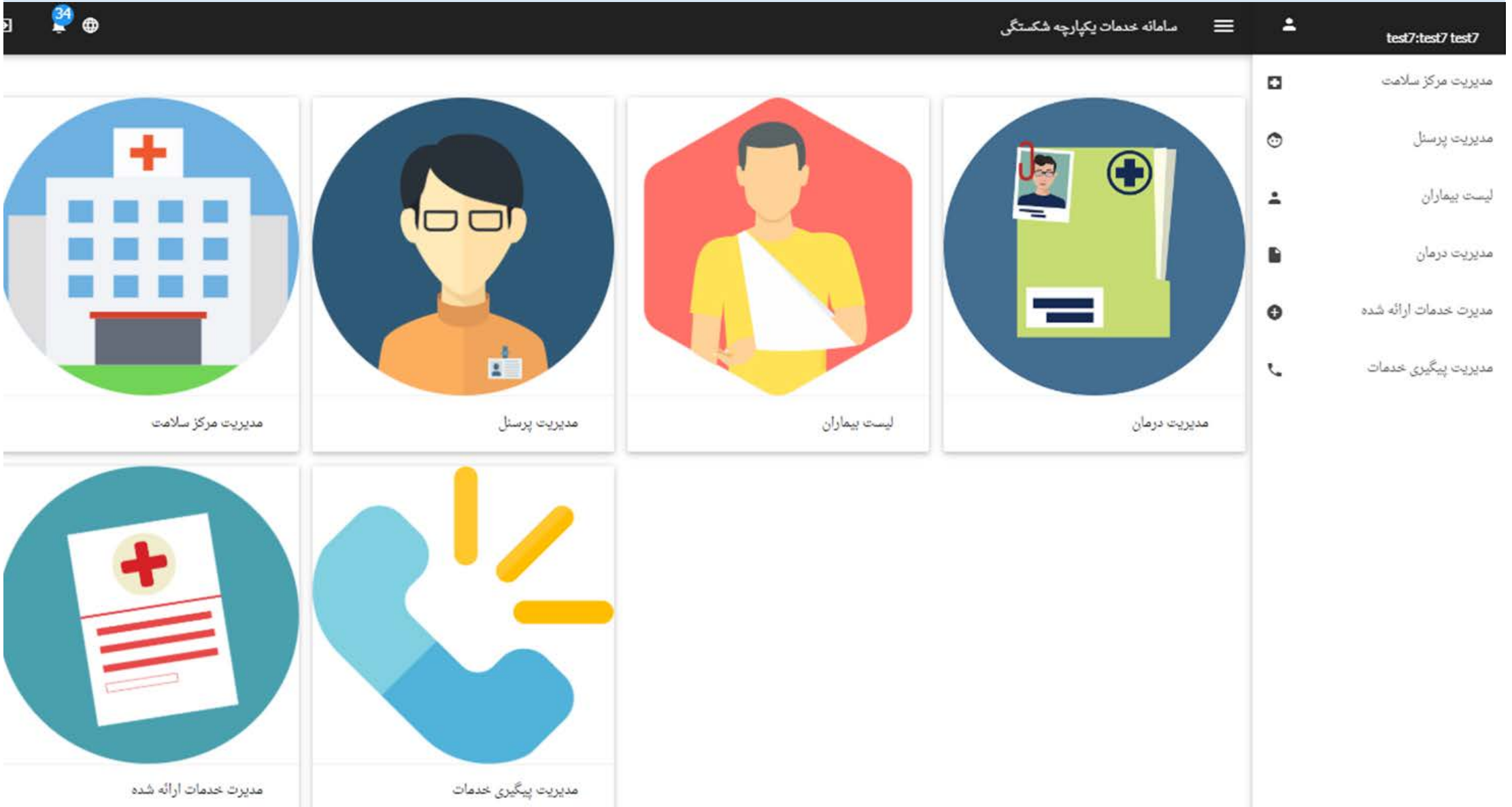
- BMD testing (48.0% vs. 23.5%)
- Treatment initiation (38.0% vs 17.2%)
- Greater adherence (57% vs 34%)

And

- Less unweighted average rates of re-fracture (6.4% vs 13.4%)
- Less unweighted rates of mortality (10.4% vs 15.8%)

Meta-analysis revealed significant FLS-associates improvements in all outcomes

FLS in Iran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مدیریت پیگیری خدمات
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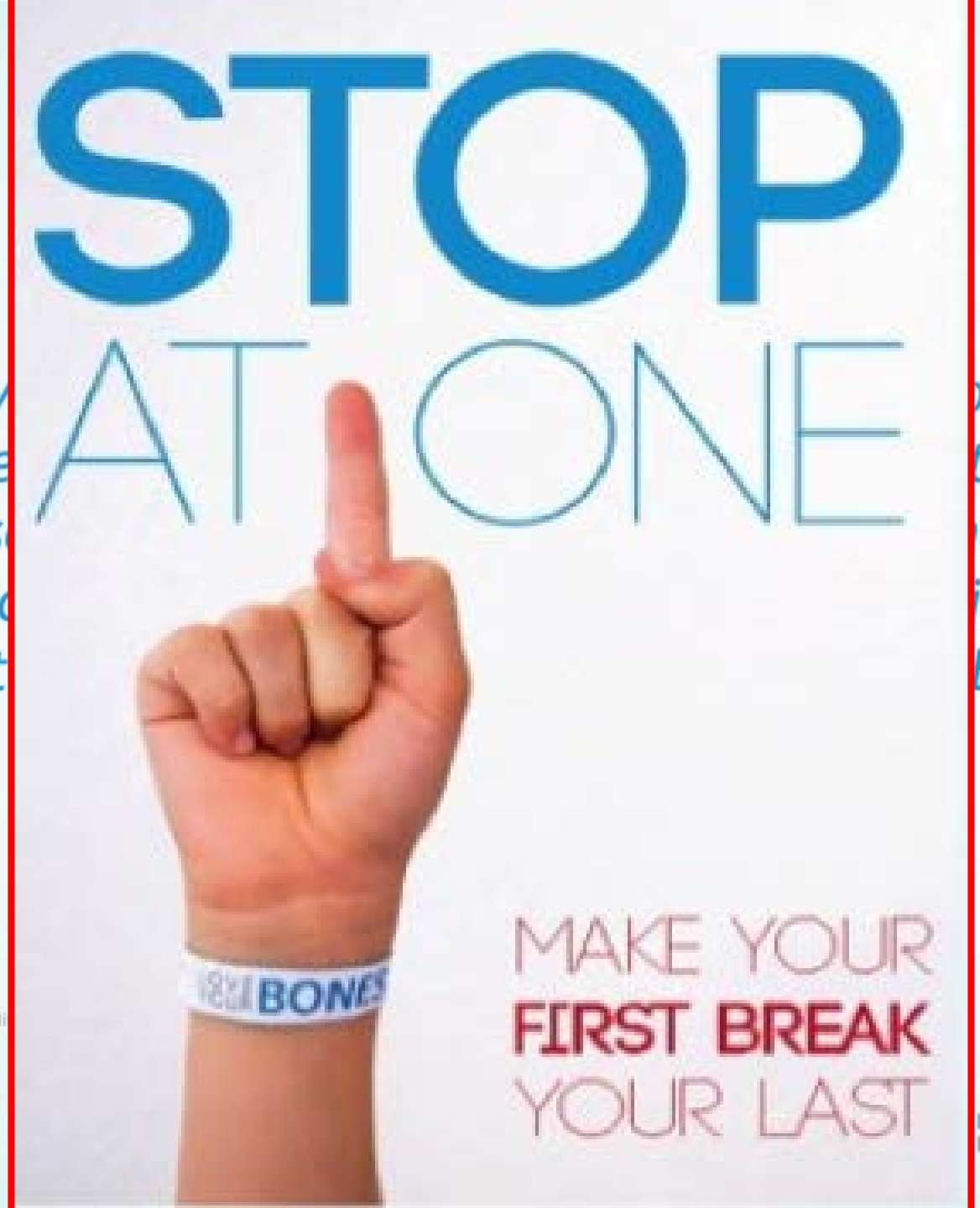
مدیریت مرکز سلامت
مدیریت پیگیری خدمات
مدیریت خدمات ارائه شده

Any interests could be informed by email:

emri-osteoporosis@sina.tums.ac.ir



'Ov ople will
cele t of this,
abs ain high
and c ior threat
t East.'

Cooper C, Mi

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