

Steps in Setting Up a Fracture Prevention Program

Rick Dell MD

Objectives of this talk

- **Learn a minimum of three reasons why a Fx Prevention Service is a good idea**
- **How it is done and still make a profit**
- **Actually help 1 or 2 of you to set up a program**
- **For the others at least refer when needed**

My Team



A Fracture Liaison Service (FLS)

Is a model of care that is patient focused and utilizes a NP, PA, or nurse as the Liaison to help to systematically coordinate care using evidence based guidelines to prevent fragility fxs

Maximize cost-effectiveness by stepwise delivery

Hip fracture patients

Objective 1: Improve outcomes and efficiency of care after hip fractures by delivering professional standards per established performance and quality measures

Non-hip fragility fracture patients

Objective 2: Respond to the first fracture to prevent the second through establishment of **Fracture Liaison Services** bridging hospital and primary care services for fracture patients

Individuals at high risk of 1st fragility fracture or other injurious falls

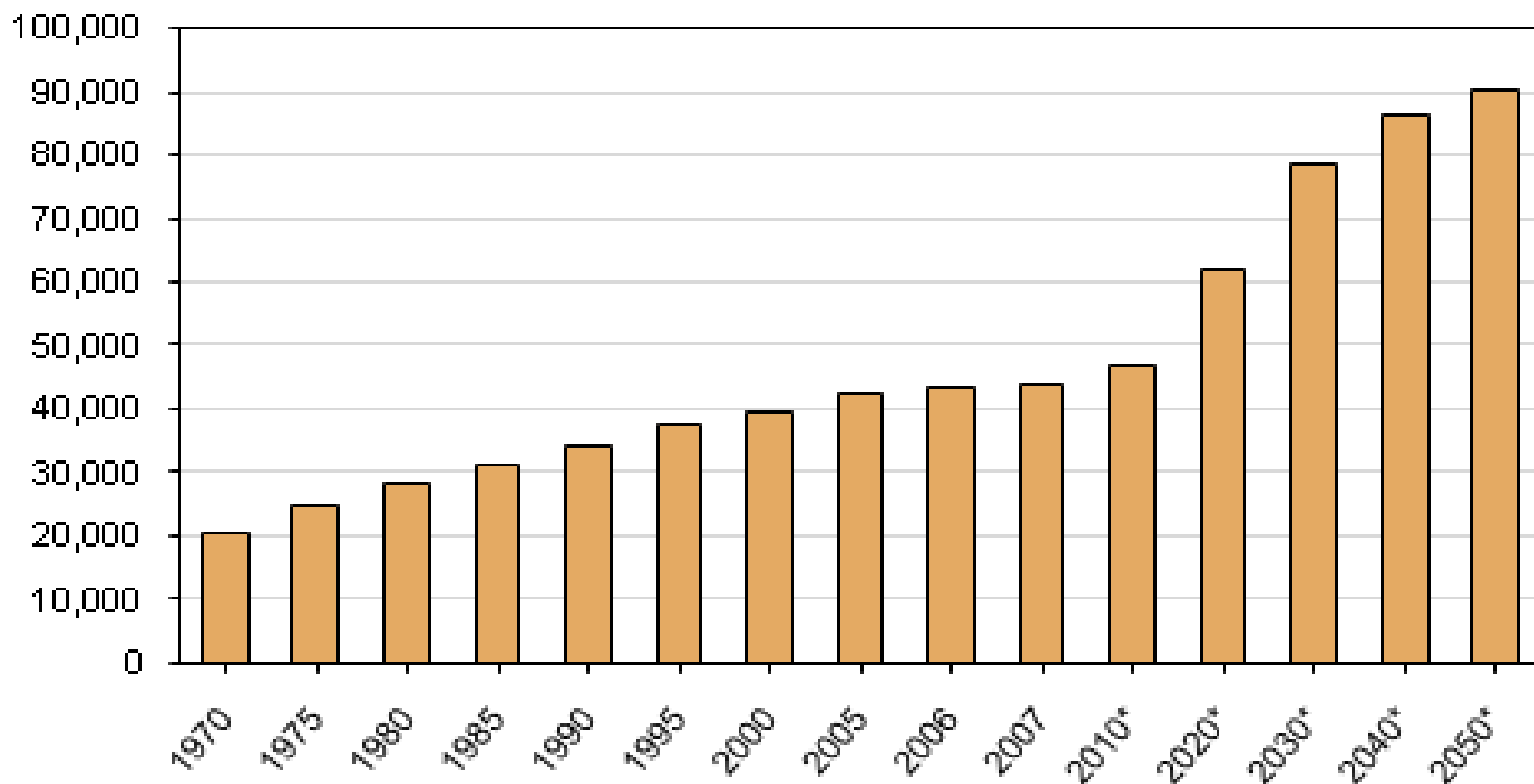
Objective 3: Health insurers or primary care providers to **stratify risk** for their patients using fracture risk assessment tools combined with bone density testing

Older people

Objective 4: Consistent delivery of public health messages on preserving physical activity, healthy lifestyles and reducing environmental hazards

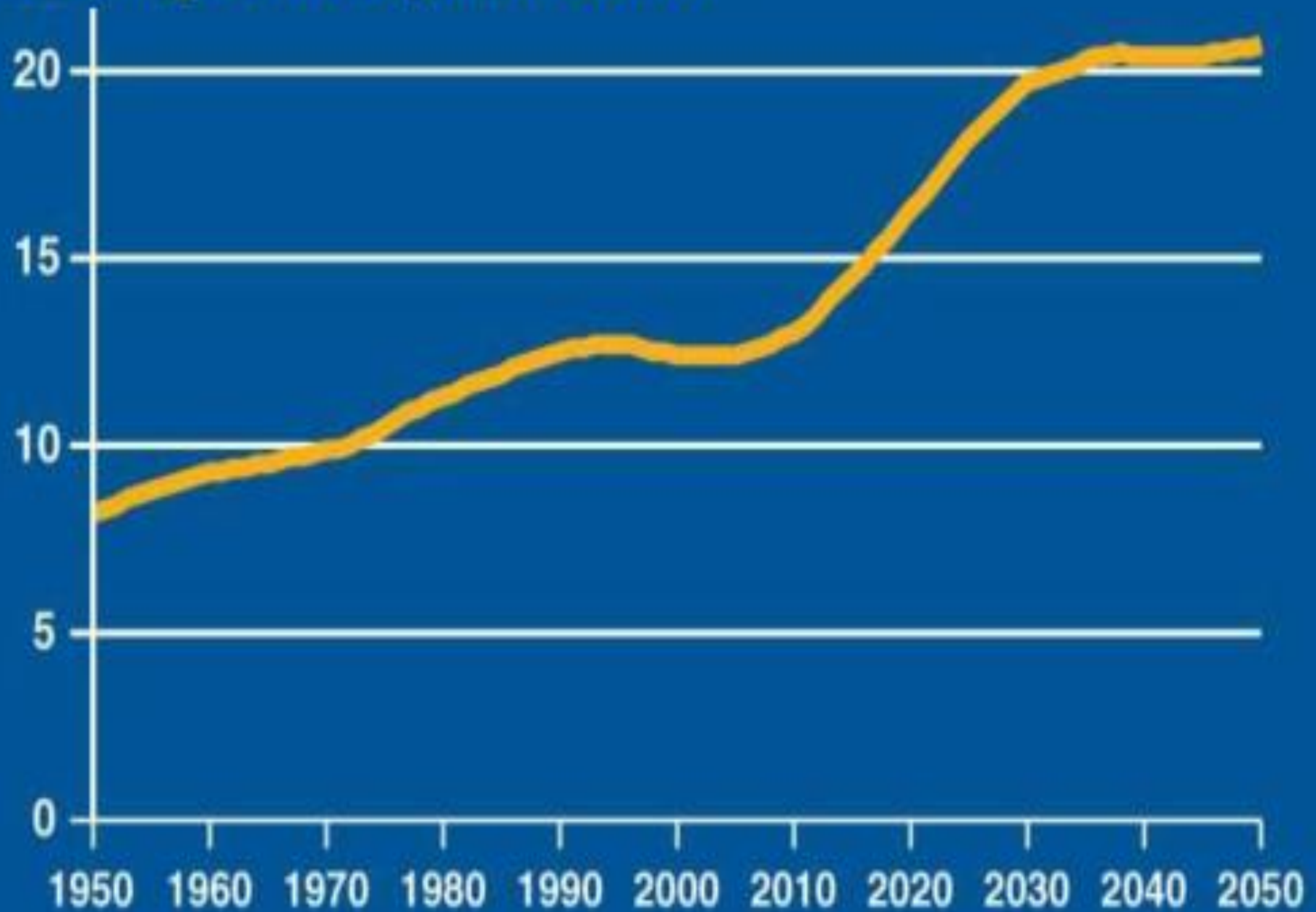
Growing number of Medicare beneficiaries

Past and projected enrollment in Hospital Insurance (HI) and Supplementary Medical Insurance (SMI), in thousands, 1970–2050



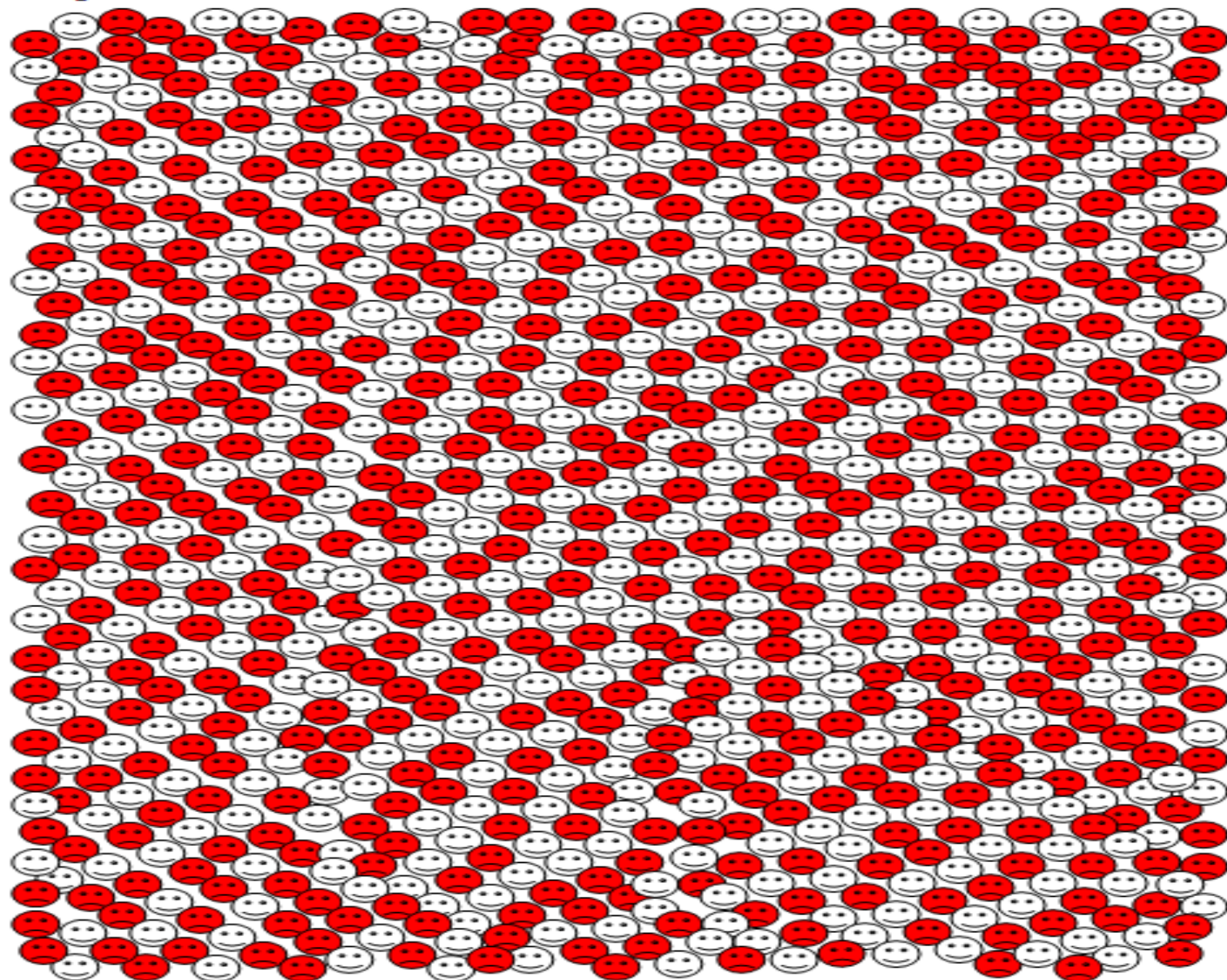
Source: "2008 Annual Report of the Boards of Trustees of the Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds," March 2008, Centers for Medicare and Medicaid Services

Percentage of U.S. Population Over 65



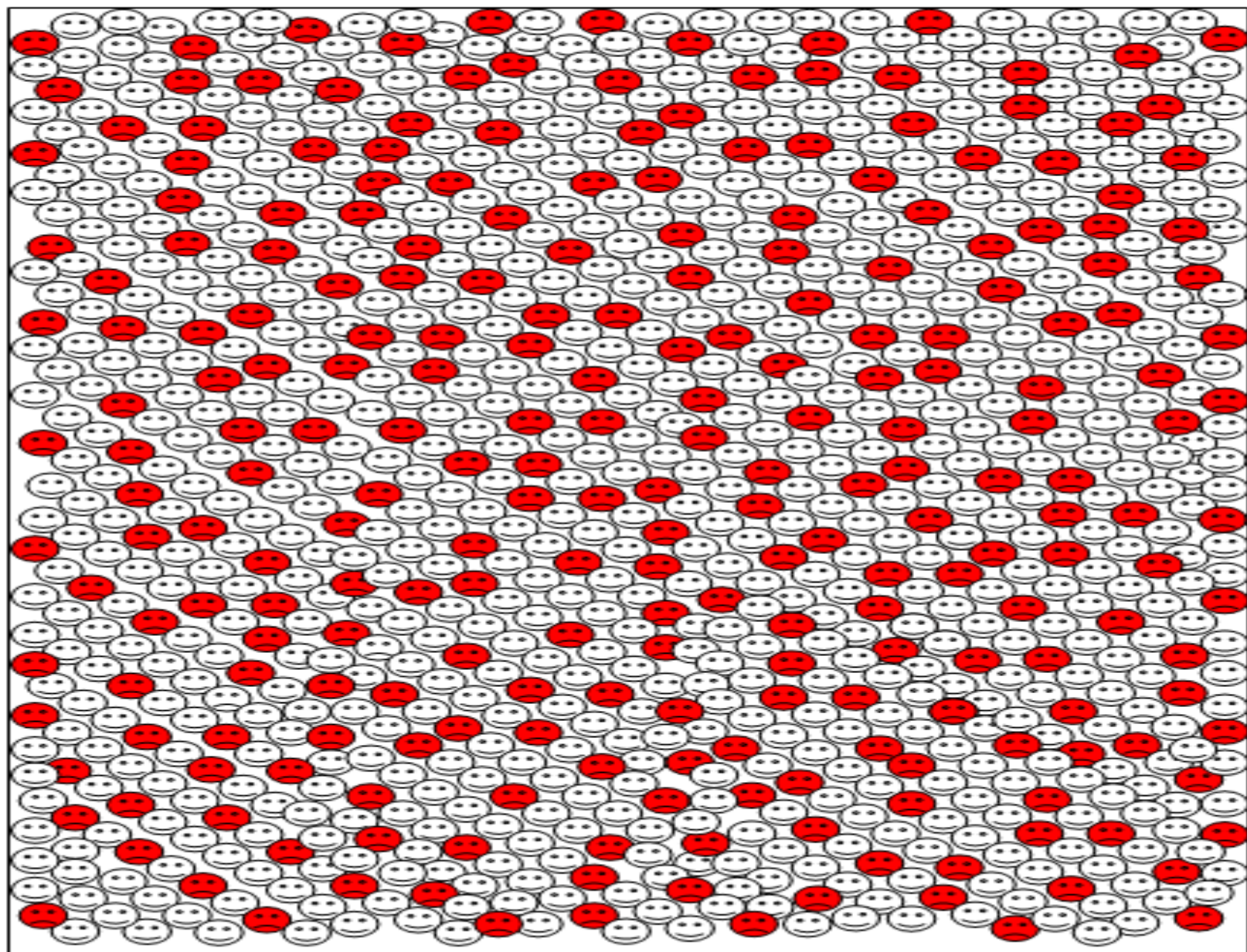
YOUR RISK OF FRACTURE

Out of 1,000 women, 500 will suffer a fracture without treatment for Osteoporosis!

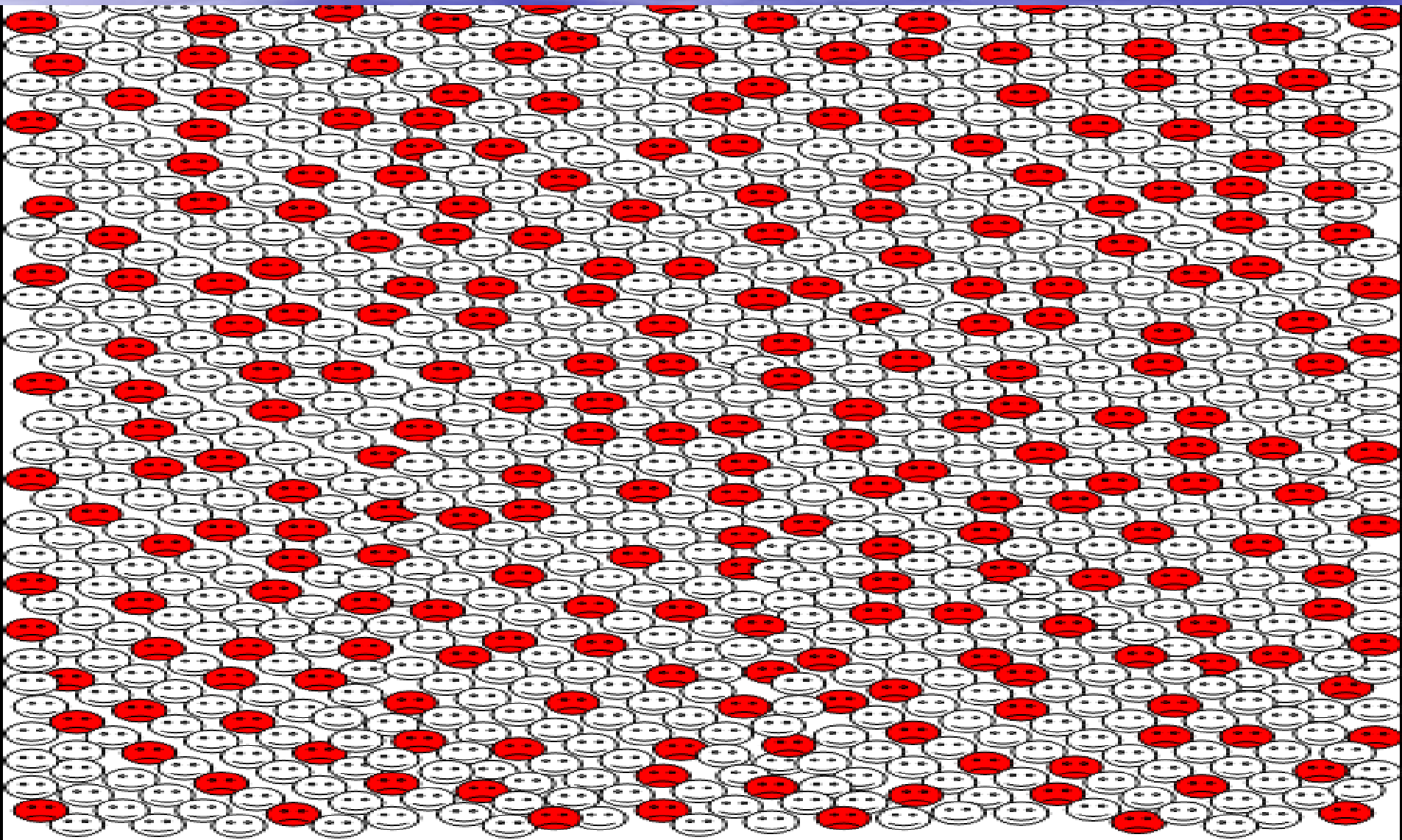


YOUR RISK OF FRACTURE

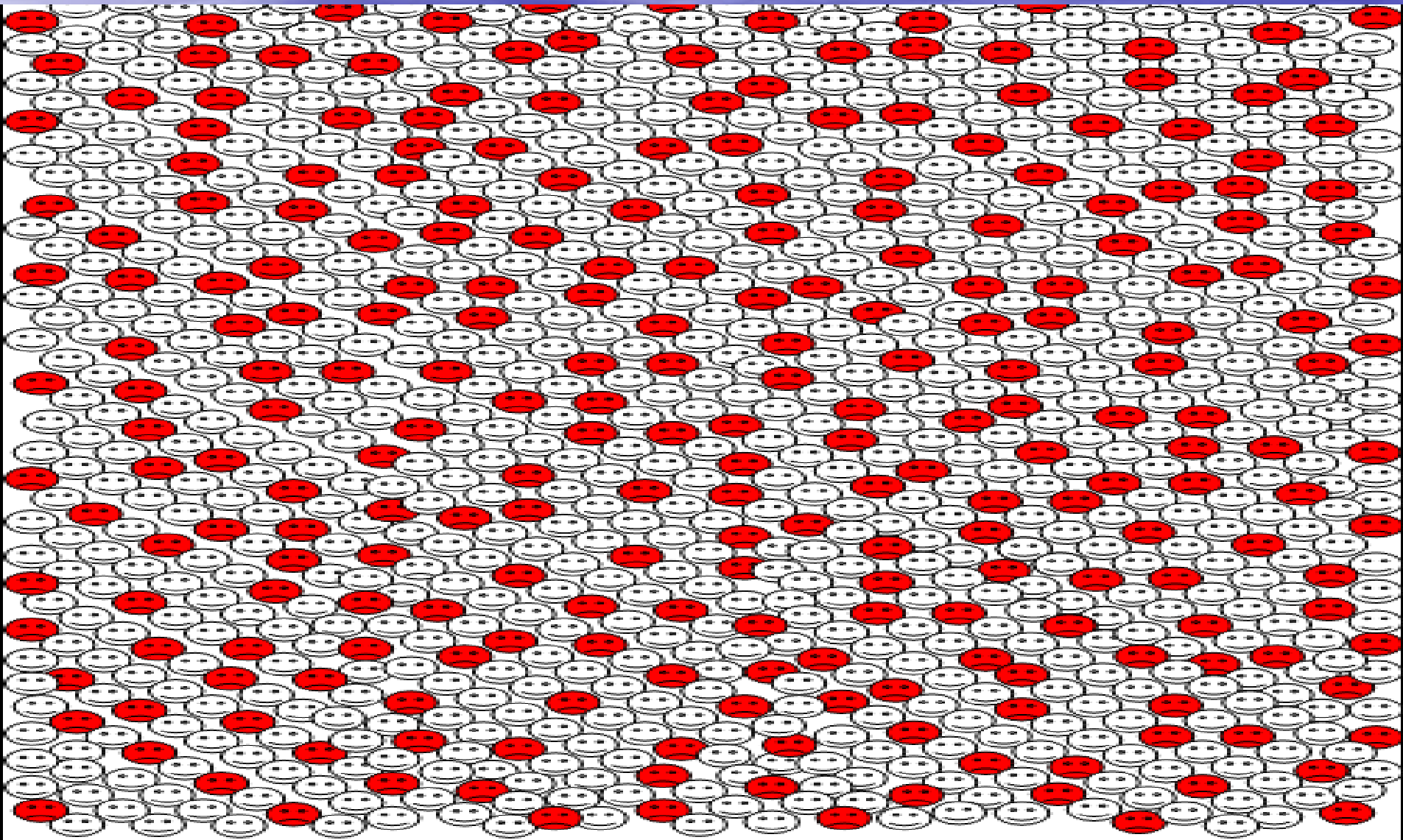
Out of 1,000 men, 240 will suffer a fracture without treatment for Osteoporosis!



Your risk of death after a hip fx



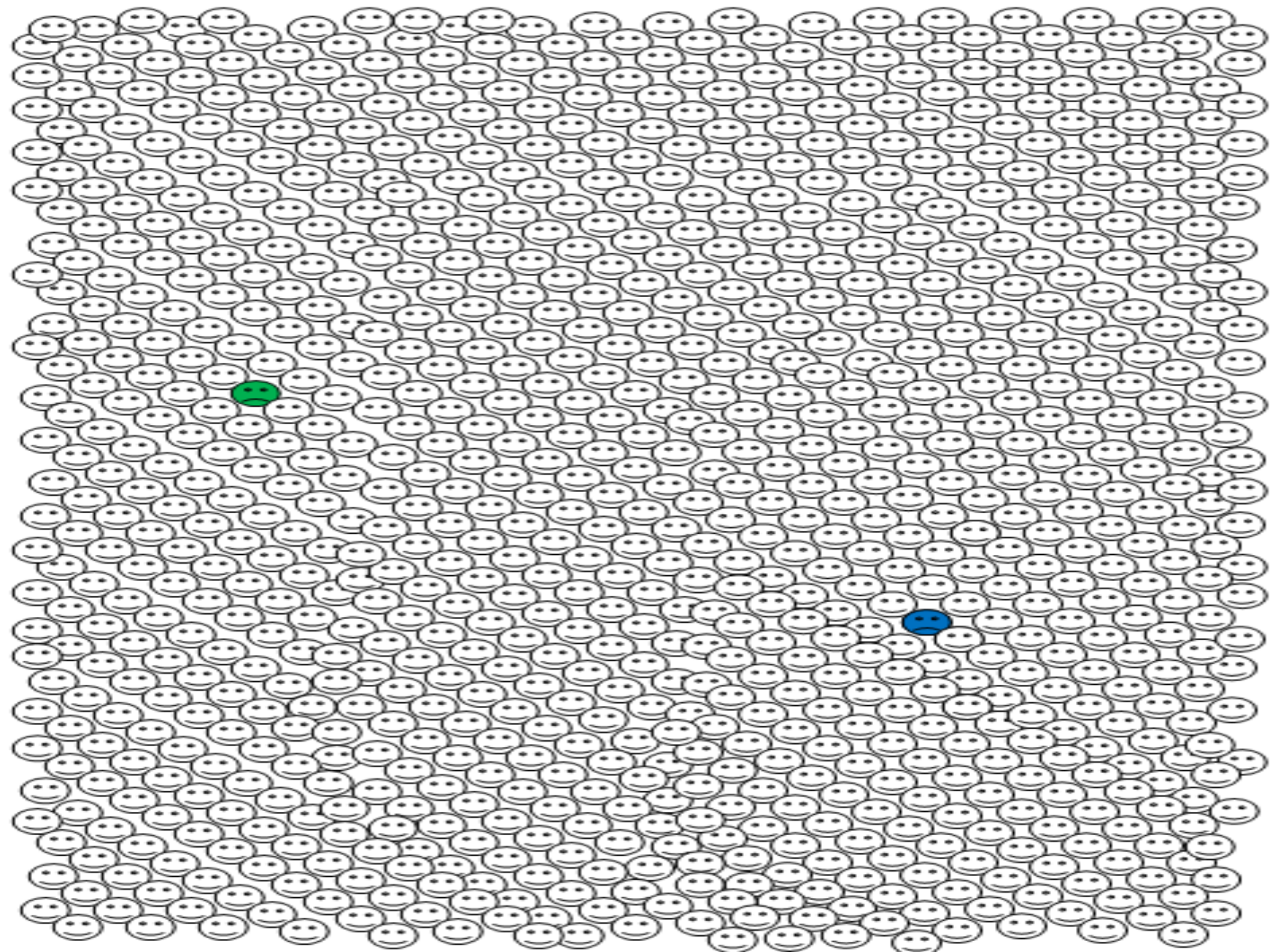
Your risk of ending up in a nursing home if you have a hip fx



THE RISK OF TAKING BONE STRENGTHENING MEDICATION

Out of 1,000 people on Osteoporosis medication for 5 years:

- Less than 1 may have a jaw problem 😞 (.01/1000)
- Less than 1 may have a rare treatment related fracture 😊 (.16/1000)



Partners & Buy-In

- Physician Champion(s)
 - Doer and Thinker
 - Energy to run system
- EMR System
 - Communication
 - Record Keeping
- Approved Protocols
 - Ease of Treatment
 - Everyone on “Same Page”
- Referral Process
 - Easy
 - Passive

Nurse Practitioner (NP)

- Educator
- Communicator
- Mid Level Provider
- Reduces Competition
 - Internally – Ortho Partners, RN, PA
 - Externally – PCP, Referral Sources
- Billing
 - Direct – Bill under NP name & number
 - Incident to – Bill under supervising MD name & number
 - Shared – Bill under MD or NP

1. Direct Billing

- Services are reported under the NPP's name and number.
 - NPP can see all patient visit types.
 - Requires general supervision by the physician (service provided under the physician's overall direction, but physician presence not required)
 - Reimbursement rules vary by payer type

What are the key pieces on an FLS

- Patient Identification
- Patient Evaluation
- Assessment Timing
- Assessment Guidelines
- Secondary Causes of Osteoporosis
- Falls Prevention Services

How – I like to keep it SIMPLE

- **S** – Simple in design
- **I** – Inexpensive to start and maintain
- **M** – Measurable outcomes
- **P** – Pays for itself to make it last
- **L** – Lasts (the program must survive)
- **E** – Evolves with time

Osteoporosis/Fracture Prevention

CLINICAL PRACTICE GUIDELINES

This evidence-based guideline was developed to assist Primary Care physicians, specialists and other health care professionals in the primary and secondary prevention of osteoporotic ("fragility") fractures in otherwise healthy women and older men.

Summary of Recommendations

PREVENTIVE MEASURES FOR ALL ADULTS

- **Calcium:** 1,200 mg/d, including diet and supplements, for postmenopausal women and men aged 50 and older
- **Vitamin D:** 1,000 IU/day, including diet, for pre- and postmenopausal women and men aged 50 and older
- **Exercise:** Regular weight-bearing and muscle-building exercise
- **Smoking cessation**
- **Home safety proofing** for postmenopausal women and men at risk of falling (hip protectors not recommended)

OSTEOPOROSIS SCREENING

- For women aged 65 and older and men aged 70 and older:
 - order a BMD test by dual x-ray absorptiometry
 - if the Z-score is -2.0 or lower, evaluate for secondary causes

OSTEOPOROSIS TREATMENT

- If a patient aged 50 or older has had a fragility fracture, recommend BMD testing to verify significant bone loss and/or initiate treatment
- Initiate treatment if the T-score is -2.5 or lower based on DXA measurement at the femoral neck, total hip or AP spine.
- If the T-score is **below -1.0 but above -2.5**, use the FRAX[®] risk assessment tool to estimate fracture risk (see Fig. 1):
 - initiate drug treatment in those with a 10-year probability of hip fracture of 3% or higher or major osteoporotic fracture of 20% or higher.
 - drug treatment is optional when the FRAX[®] 10-year

Bone Mineral Density (BMD) Test

- Dual-x-ray absorptiometry (DXA) is the recommended screening test for osteoporosis.
- The lowest T-score from the measurements of the total hip, femoral neck, and lumbar spine (L1-L4 composite score) is recommended to establish a diagnosis of osteoporosis (T-score -2.5 or lower).
- The distal nondominant forearm "1/3 radiologic site" is an option for patients in whom hip and spine BMD cannot be measured or interpreted.

Note: One hip is required for DXA measurement of the hip. Use the lowest T-score if both hips are evaluated. When vertebrae affected by local structural change or artifact are excluded, the lumbar spine composite score reflects only the remaining vertebrae (e.g., L2-L4, L3-L4, etc.).

REPEAT BMD TESTING

- If BMD retesting is indicated based on the patient's risk factor profile, then the recommended interval between tests is 10 years.

BMD testing is generally not indicated if the outcome of the test will not change patient management.

Table 1: WHO Definition of Osteoporosis

- **Normal:** BMD within 1 standard deviation of the young adult reference mean (T-score -1.0 or higher)
- **Low bone mass:** BMD more than 1 standard deviation below the young adult mean, but less than 2 standard deviations below this value (T-score below -1.0, but above -2.5)
- **Osteoporosis:** BMD 2.5 standard deviations or more below the young adult mean (T-score \leq -2.5 or lower)

FRAX[®]

WHO Fracture Risk Assessment Tool

Home

Calculation Tool

Paper Charts

FAQ

References

English

Calculation Tool

Please answer the questions below to calculate the ten year probability of fracture with BMD.

Country: **US (Caucasian)**Name/ID: [About the risk factors](#) 

Questionnaire:

1. Age (between 40-90 years) or Date of birth

Age:

Date of birth:

Y: M: D:

2. Sex

Male

Female

3. Weight (kg)

4. Height (cm)

5. Previous fracture

No

Yes

6. Parent fractured hip

No

Yes

7. Current smoking

No

Yes

8. Glucocorticoids

No

Yes

9. Rheumatoid arthritis

No

Yes

10. Secondary osteoporosis

No

Yes

11. Alcohol 3 or more units per day

No

Yes

12. Femoral neck BMD (g/cm²)

GE-Lunar

T-score: -2.1

Clear

Calculate

BMI 22.5**The ten year probability of fracture (%)** **with BMD**

■ Major osteoporotic	20
■ Hip fracture	5.2



Weight Conversion

Pounds  kg

Convert

Height Conversion

Inches  cm

Convert

01130963

Individuals with fracture risk assessed since 1st June 2011

Having trouble with the FRAX tool?



P Innovation Profile:**Capitated System Identifies, Screens, and Treats Osteoporosis Risks, Preventing Hip Fractures, Saving Lives, and Reducing Costs****Snapshot***Summary*

Kaiser Permanente Southern California developed the *Healthy Bones Model of Care* program to proactively identify, screen, and treat those with or at risk for osteoporosis, and hence reduce the risk of costly, debilitating fractures. With the support of information technology systems that identify enrollees with gaps in care, care managers and clinicians proactively reach out to those in need of screening to schedule a bone density scan. Using a "just-in-time" approach overseen by the care managers, scan results are interpreted immediately and those requiring additional services receive, as appropriate, education on osteoporosis, a prescription for medication to improve bone density, and referrals to additional support. To encourage continuous improvement, Kaiser provides regular reports to the region's 11 medical centers documenting performance versus peers. The program significantly increased screening and treatment rates, leading to a 41 percent reduction in hip fractures, more than 250 lives saved each year, and an estimated \$39.5 million annual reduction in the treatment costs for such fractures, a figure that far outweighs program costs.

Evidence Rating (What is this?)

Moderate: The evidence consists of pre- and post-implementation comparisons of use of screening tests and osteoporosis medications; a comparison of the expected number of fractures (based on historical data) to the actual number of fractures that occurred after implementation; an estimate of the treatment cost savings associated with this reduction in fractures; and comparisons of Kaiser Permanente Southern California's performance on a key HEDIS® measure to performance across all Kaiser facilities nationwide and to the national 90th percentile for the measure.

Developing Organizations

Kaiser Permanente Southern California

What They Did

[Back to Top](#)

Problem Addressed

Ten million Americans have osteoporosis (very low bone density, leading to fragile, porous bones), with another 34 million being at risk of developing the disease. Because bone density tends to decline with age, the prevalence of osteoporosis is likely to increase significantly as the population ages. Osteoporosis frequently leads to debilitating, expensive fractures from which individuals often never fully recover, with many dying within a year of the fracture or ending up in a nursing home. Effective screening and treatment of affected and at-risk individuals can significantly reduce the risk of fractures, but the majority of eligible patients do not receive such services.

- **A common, growing problem:** Ten million Americans, including 8 million women and 2 million men, have osteoporosis. Another 34 million have low bone density, putting them at increased risk of osteoporosis and associated fractures.¹ As the population ages, the prevalence of osteoporosis will increase, because bones naturally lose density over time.²
- **Leading to many debilitating, costly fractures:** Each year, an estimated 1.5 million individuals with osteoporosis suffer a fracture, typically because their weakened, porous bones cannot handle the impact of a fall or other accident.¹ One-half of all women and one-third of all men will sustain this type of fragility-related fracture at some point in their life.³ These fractures tend to be expensive to treat (costing \$18 billion a year¹) and debilitating to those who suffer them. Most patients never fully recover, particularly from hip fractures. Of the 325,000 individuals who experience hip fractures each year, one-fourth die within a year, 24 percent end up in nursing homes, and one-half never reach their previous functional capacity.² Men are much more likely to die within a year of a hip fracture than women (30 percent of men die, compared with 17 percent of women),⁴ and the total mortality rate due to osteoporosis-related fractures is greater than the rates for breast and cervical cancer combined.⁵
- **Largely unrealized potential of screening and treatment:** Although osteoporosis treatment can reduce fracture rates significantly (by up to 50 percent for hip fractures),^{6,7} many eligible patients do not receive such treatment, often because they have not been adequately screened for the disease. Even among patients who have already experienced a fragility-related fracture (for whom the risk should be clear), only 20 percent receive treatment for osteoporosis.⁸

Description of the Innovative Activity

The Healthy Bones Model of Care program proactively identifies, screens, and treats those with or at risk for osteoporosis. With the support of information technology (IT) systems that identify patients at risk for osteoporosis and fractures, Kaiser Permanente care managers and clinicians proactively reach out to those in need of screening or treatment. Using a "just-in-time" approach overseen by the care managers, scan results are interpreted immediately and members requiring additional services receive education on osteoporosis, a prescription for medication to improve bone density, and/or referrals to additional needed support during the same visit. To encourage continuous improvement, Kaiser Permanente provides regular reports to the region's 13 medical centers documenting performance among peers. Key elements of the program include the following:

- **Daily lists of patients with care gaps:** Information provided in June 2012 indicates that each day, care managers and clinical "champions" within each medical center receive a list of enrollees with identified gaps in care related to osteoporosis, including the following: those who have had a fragility fracture but have not had a recent bone density (also known as dual x-ray absorptiometry, or DXA) scan; those who have had a hip fracture

AHRQ Innovation Website

- **AHRQ – Agency HealthCare Research and Quality**
- **<http://innovations.ahrq.gov/content.aspx?id=2826>**
- **Google - AHRQ Innovation Kaiser Healthy Bones**

OPINION PAPER

Fracture prevention in Kaiser Permanente Southern California

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Making the First Fracture the Last Fracture: ASBMR Task Force Report on Secondary Fracture Prevention

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Steps to Success



Steps to Success (cont'd)



Steps to Success (cont'd)



Steps to Success (cont')



- **10 take away messages**

- 1) Every Orthopedic Surgeon should understand basics of osteoporosis and actively identify and treat or refer to someone to treat
- 2) With the passing of the SGR Relief Bill the world will start to slowly change
- 3) We all are responsible after a bad event to do something and we are responsible to avoid bad events
- 4) Relatively easy to start a FLS
- 5) You will actually make money doing it

- 6) Patients will be happy and have less chance of a fracture (loss of independence is actually what they fear) Ending up in a nursing home is worse than death
- 7) Susan and I will happily send you talks to give in your community to address osteoporosis/fx prevention
- 8) The AOA's Own the Bone can help
- 9) NBHA can help
- 10) I only expect 1 or 2 of you to actually do this

- My email is rmdell@att.net
- My cell phone is 626-372-0656
- Or contact David Lee the Director of the NBHA
- Own the Bone - <http://www.ownthebone.org>

Contact

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If it's fifty + fracture,
request a test.

Learn more at
2MILLION2MANY.org



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