

NSW Health Symposium - 19 October 2012

Session 4: *Improving Models of Care for Older People*

Reducing Osteoporotic Fractures Through Targeted Intervention

Markus J. Seibel, Anna Lih, Susan Maree and Kirtan Ganda
Concord Repatriation General Hospital

Osteoporosis is Common

Source: Osteoporosis Australia, 2001

2001:

Prevalence: ~ 1.9 Mio

Incidence: 64,500 # pa. hospitalised (1 / 8 min !)

Cost: \$7.3 billion per year

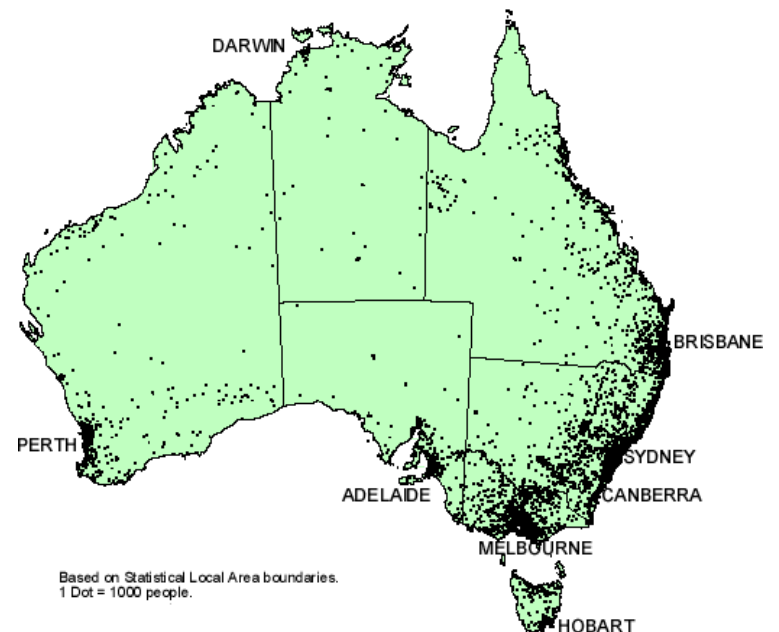
2020:

Prevalence: ~ 3 Mio

Incidence: 141,000 pa.

1 / 4 min!

1 in 3 hospital beds!!



Osteoporosis Management

In contrast to 15 years ago, we today have

- means to quantify fracture risk in individuals.
- potent pharmacological agents that prevent first or subsequent fragility fractures.

Osteoporosis Management

Are we making use of this potential?

Medication at Discharge

CRGH Audit 2003/4

None	65.4
Multivitamin alone	2.7
Calcitriol alone	4.1
Testosterone therapy alone	0.3
Calcium supplement alone	4.8
Vitamin D supplement alone	3.8
Calcium and vitamin D only	3.4
Anti-resorptive Rx (BP, RLX, HRT)	15.9%
Calcium + anti-resorptive Rx	
Vitamin D + anti-resorptive Rx	
Calcium + vit D + anti-resorptive Rx	

Osteoporosis Under-Treatment: A Universal Problem!

Therapy after

- Myocardial infarction 93 - 98%
- Minimal Trauma Fracture up to 18%

What do these figures mean?

Patients with minimal trauma fractures are

➤ being surgically fixed

but

➤ not assessed for osteoporosis and

➤ not treated for their underlying condition.

AD 2005: World's Worst Practice

Four out of five people presenting to hospital with an osteoporotic fracture are being denied effective fracture prevention

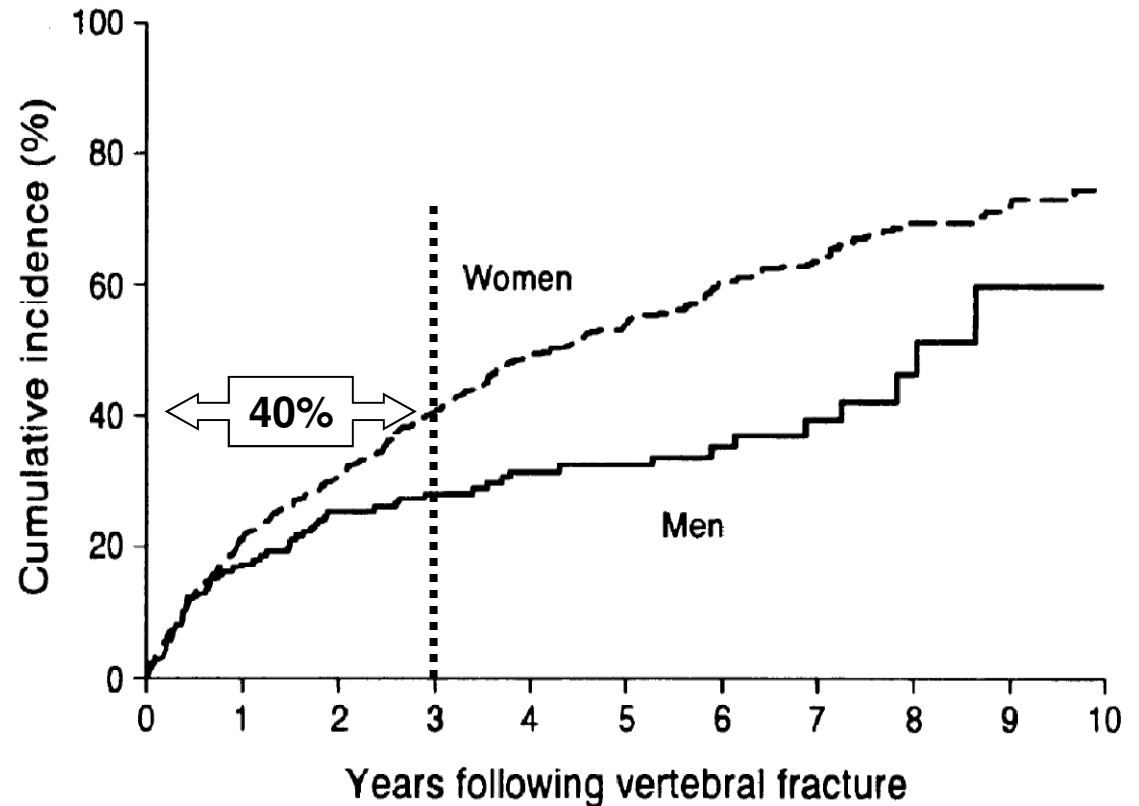


Ambrroise Pare, Paris 1582

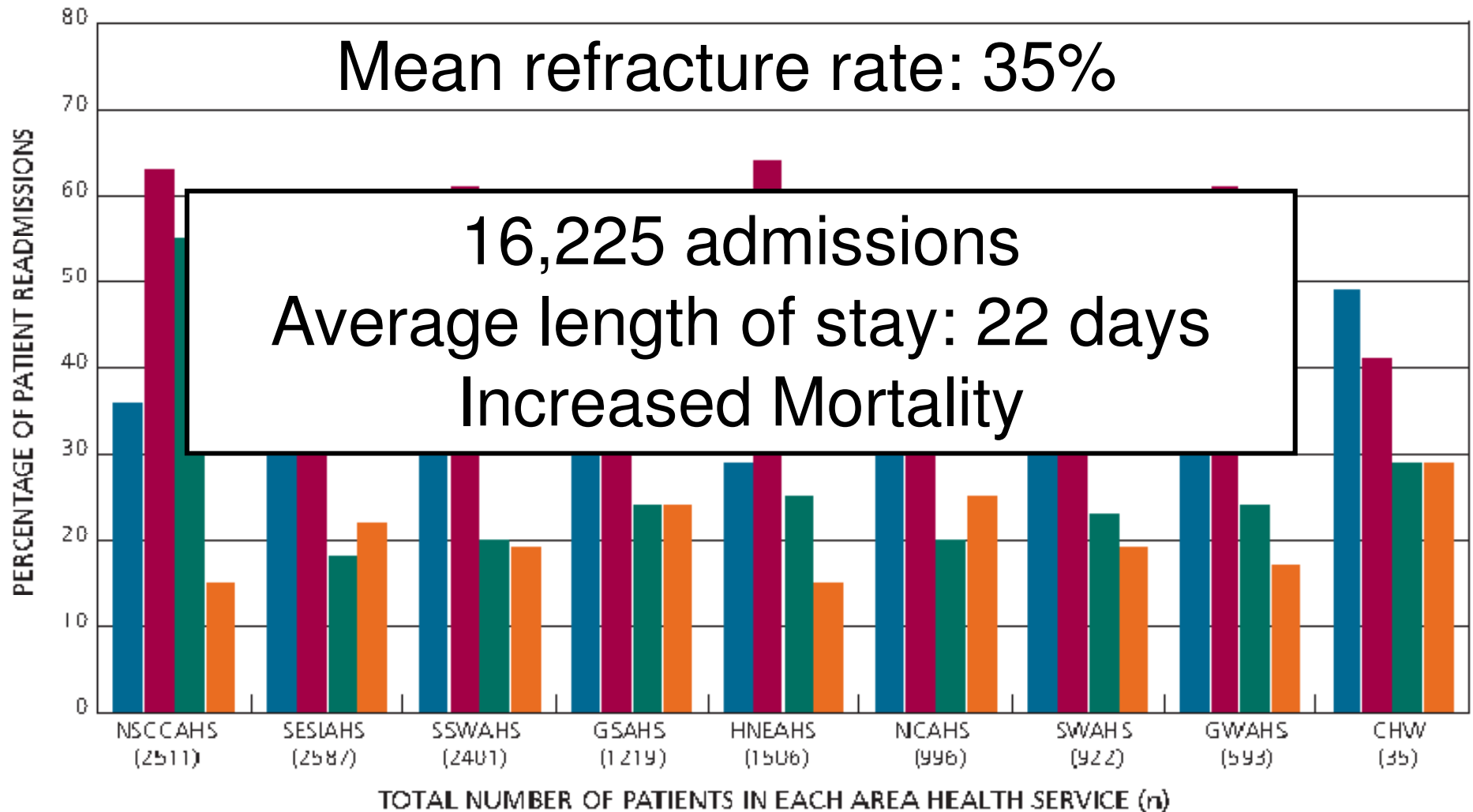
Why is this unacceptable?

75% of patients who have suffered one osteoporotic fracture will sustain further fractures within 10 years.

40% will do so within 3 years.



Readmissions to NSW Hospitals for Refracture 2002 - 2008



■ Total of readmitted patients ■ Patients who experience 2 readmissions
■ Patients who experience 1 readmission ■ Patients who experience 3+ readmissions

How Can We Close the Osteoporosis Care Gap?

NOT EFFECTIVE

- Patient Education alone from Emergency Department
- GP communication alone from Emergency Department

Moderately EFFECTIVE

- Patient Education of in-patients with telephone support
- Orthopaedic Protocols
- GP protocols
- Patient Education and GP referral

MOST EFFECTIVE

- Fracture Liaison Service with dedicated staff

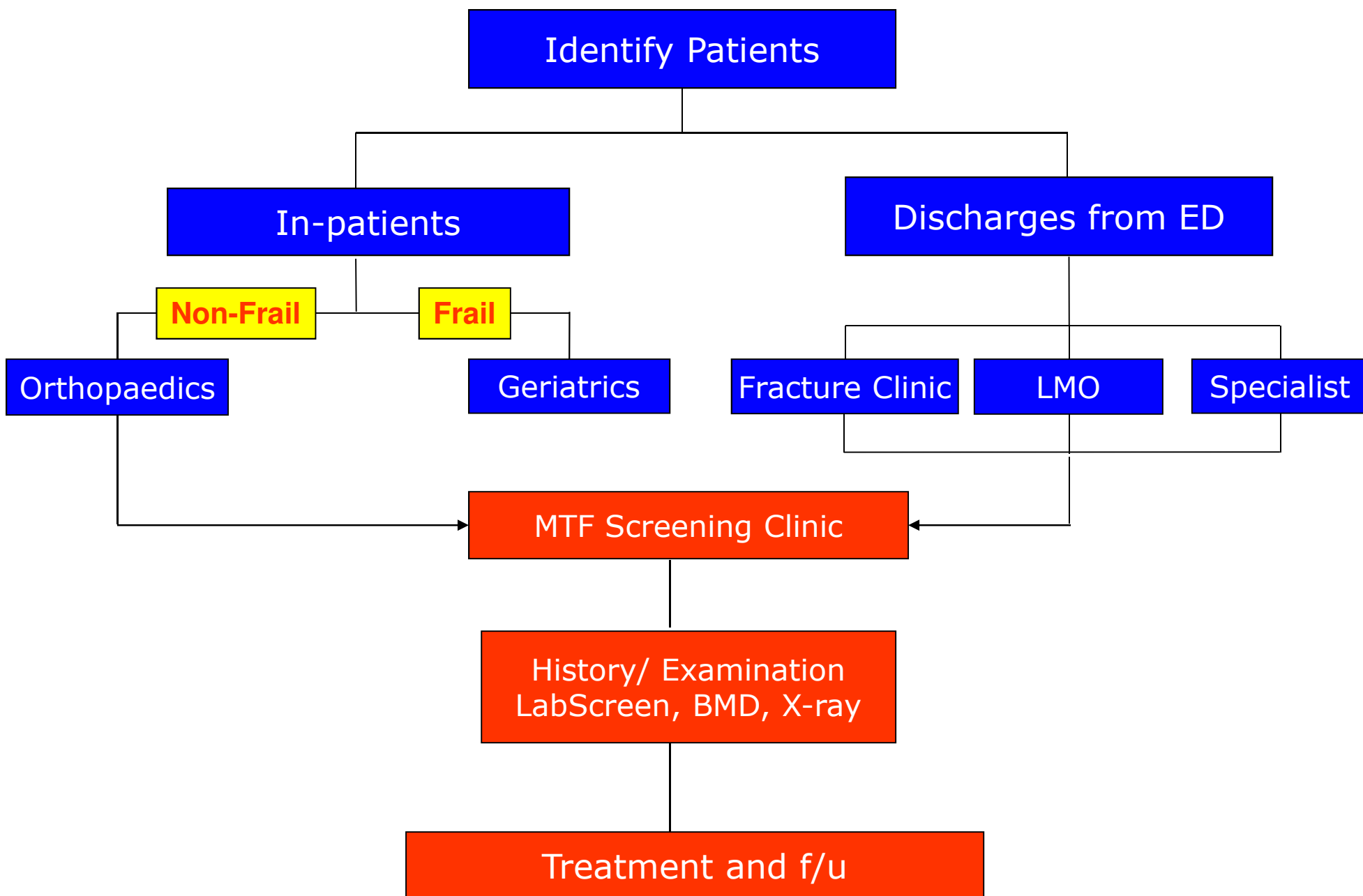
The Concord Hospital Fracture Liaison Service

2005 - 2011



The Concord Hospital Fracture Liaison Service

- ◆ *Actively* identify patients presenting to hospital with a MTF.
 - Dedicated human resources!
 - Registrar with help from nursing and administrative staff
 - Close co-operation with Orthopaedic Surg., Geriatric Medicine, ED
- ◆ *Actively* refer patients to FLS for review.
- ◆ *Actively* initiate investigations into cause of MTF.
 - Hx, PE, X-ray, BMD, lab, others
- ◆ *Actively* establish diagnosis.
- ◆ *Actively* initiate treatment as appropriate.



The Concord Hospital Fracture Liaison Service

Outcome:

Analysis of Refracture Rates

'FLS' vs. 'Standard Care'

2005 - 2009

Patients Presenting with a Non-Vertebral Fracture
May 2005 - Dec 2007
N=1544

Not eligible by entry criteria
N= 850

Eligible
N= 694

Attended
MTF Service
N=288

Not attended
MTF Service
N=406

Contacted at study completion
N= 288

Contacted at study completion
N= 246 *

Lost to Follow-up N= 42
Died, **n= 1**
Institutional review board, n= 5
Insufficient English, n= 9
Not contactable, n= 27

Lost to Follow-up N=89
Died, n= 17
Demographics, n= 1
Refused participation, n= 6
Insufficient English, n= 13
Not contactable, n= 41

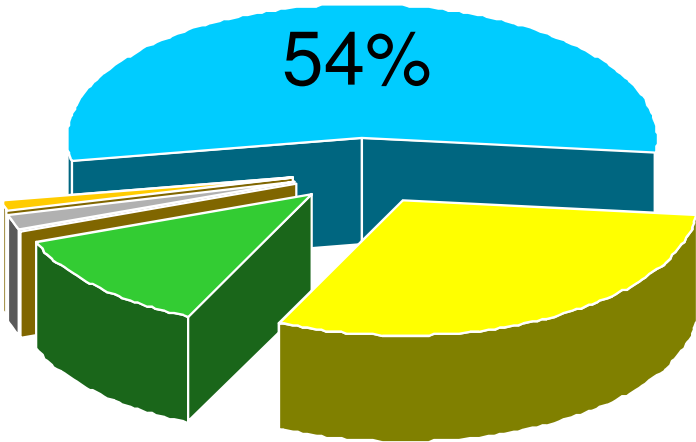
MTF Intervention
N=246

Controls
N=157

*random sample

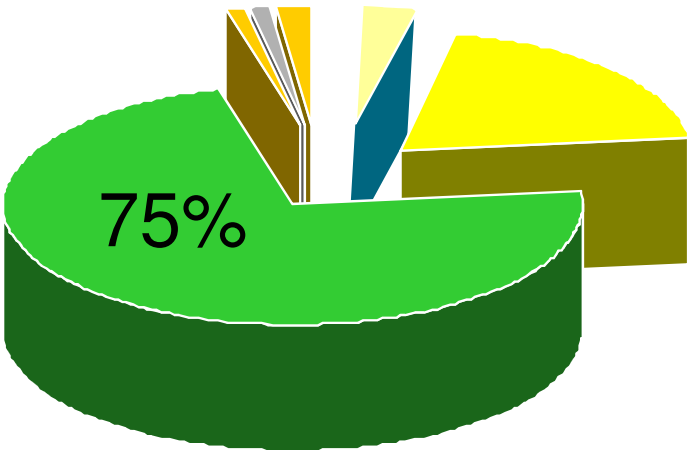
Specific Anti-Osteoporotic Medication

At Time of Capture



< 15% on active treatment

At time of Discharge from MTF Clinic

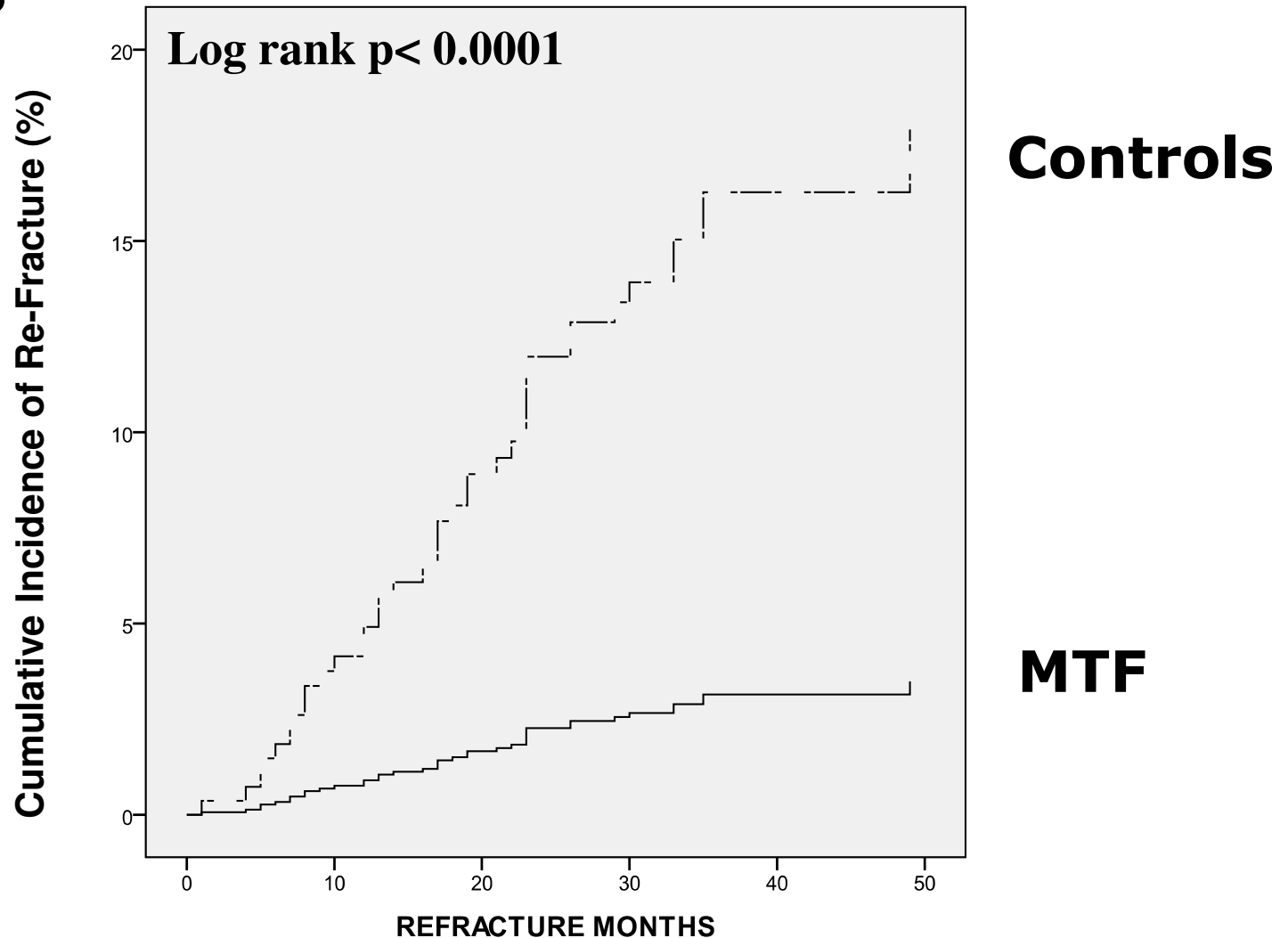


85% on active treatment

- None at all
- Ca +/- Vit D
- Bisphosphonates +/- Ca/Vit D
- Calcitriol
- Testosterone
- Raloxifene
- HRT

Cumulative Incidence of Refracture

All patients



Is This Service Cost-Effective?

Under all assumptions tested health economic effectiveness was within limits considered cost effective by Australian standards (\$7,000 – 32,000 per QALY)

The MTFLL service is cost-effective in reducing recurrent osteoporotic fractures in a high risk population.

It represents an example of excellent value for money.

Conclusions

Active identification, investigation and management of patients with minimal trauma fractures requires dedicated resources and close co-operation between disciplines.

If implemented, active management reduces the long-term risk of refracture by about 80%.

Health economic analyses indicate that Fracture Liaison Services are highly cost-effective to the society.

The Concord FLS 2012

- ◆ Integral part of Concord Endocrinology since March 12 – outpatient service
- ◆ 0.5 FTE registrar, funded by SLHD
- ◆ Limited admin & nurse support, no extra cost
- ◆ 266 patients seen in 7 months
- ◆ Based on previous data:
 - 33 major re-fractures expected over 4 years (19.7 %)
 - 10 hip fractures = \$300,000 in direct cost
 - 23 other fractures = \$115,000 in direct cost
 - \$415,000 – \$65,000 = \$350,000 “saved” for SLHD

Thanks to

- ❖ Drs. Paul Lee, Connie Yap, Kathy Wu, Haren Nandapalan
- ❖ Our colleagues at Orthopaedic Surgery, Geriatric Medicine, Emergency Medicine
- ❖ The team at the Dept. of Endocrinology & Metabolism
- ❖ CRGH and SLHD – Dr Teresa Anderson and colleagues
- ❖ Support by OA, RACP, and others.