

CLINICAL AUDIT

Identifying Patients at Risk of  
**Osteoporosis**



# Fragility fracture prevention

## Background

Osteoporosis is a silent disease and is usually only manifest clinically when an individual suffers from a fragility fracture. In order to try and prevent these fractures the traditional approach has been to adopt a case finding strategy to confirm the diagnosis of osteoporosis (BMD T-score < -2.5). However the majority of fragility fractures occur in those without osteoporosis. For example the proportion of women aged 50 diagnosed with osteoporosis is about 5%, however approximately 20% will suffer from a fragility fracture in the next 10 years.

## Reducing osteoporotic fracture risk

Osteoporotic prevention and treatment with biphosphonates reduces the risk of fractures whether there is established osteoporosis or not. The challenge now is to find and treat those at greatest risk of osteoporotic fracture. One such group is those over the age of 50 years; where it is estimated that one in two women and one in five men will fracture a bone.

## Improving assessment of fracture risk with FRAX

The WHO Collaborating Centre for Metabolic Bone Diseases at Sheffield has developed the FRAX tool to calculate the probability of an osteoporotic fracture based on a variety of established clinical risk factors, using either a body mass index (BMI) or a BMD T-score. This provides a better predictor of fracture risk than the diagnosis of osteoporosis alone. Subsequently guidelines based on osteoporotic fracture risk provide guidance on whether to treat, to clarify risk with BMD measurement or to not treat.

FRAX is available as an online calculator that is freely accessible at [www.shef.ac.uk/FRAX](http://www.shef.ac.uk/FRAX), or in a paper version available from bpac. Order online at [www.bpac.org.nz](http://www.bpac.org.nz) under Tools. See Best Tests, November 2008 for details about FRAX.

This audit focuses on the process within your practice for the prevention of fragility fractures by the implementation of systematic screening with FRAX. This requires that the appropriate data is collected, patient information is available and suitable screening opportunities are identified. By far the biggest hurdle is the collection of relevant data.

This audit does not cover the pharmacological treatment of those with osteoporotic fracture risk. However, when clinically appropriate, patients with high osteoporotic fracture risk will require a calcium and vitamin D supplementation plus a bone enhancing agent such as a biphosphonate. A DEXA scan will be required clarify risk in some cases and to fulfill the special authority criteria to access alendronate in others. See BPJ17.

# Aims

This practice audit is designed to:

- Stimulate reflection on your practice system to initiate the use of FRAX
- Identify opportunities for CQI

We encourage you to make this audit a practice-wide activity and involve all practice members including reception staff.

General practitioners who want to claim CQI points for the audit need to complete the RNZCGP summary in Appendix 1.

## Indicators

1. Patients at risk for osteoporotic fracture are identified
2. Individual patient data, required to calculate osteoporotic fracture risk with FRAX, is collected
3. Osteoporotic fracture risk is calculated

## Criteria

1. Patients are assessed for osteoporotic fracture risk and those at risk have had their “at risk” status recorded in the notes
2. The individual patient data required to calculate osteoporotic fracture risk with FRAX is recorded in the notes and is readily available
3. The calculated osteoporotic fracture risk is recorded in the notes

## Standards

1. 75% of patients in your chosen cohort (see audit plan below) are assessed for osteoporotic fracture risk and those at risk have their “at risk” status recorded in the notes
2. 75% of patients identified as “at risk” have the data required to calculate osteoporotic fracture risk with FRAX recorded in their patient notes
3. 75% of % of patients identified as “at risk” have their calculated osteoporotic fracture risk recorded in the notes

# Audit Plan

This audit is a practice-wide activity. We suggest that one practice member takes the lead in the audit and organises a first pass of the audit before a practice meeting. The practice meeting reflects on the results of the audit, reviews practice procedures and identifies opportunities for CQI. The audit leader then follows through on recommendations of the practice and reports back to the practice on progress and then organises a second pass of the audit.

## Moving towards screening of osteoporotic fracture risk

This audit is designed to aid the shift from a practice wide case-finding strategy for osteoporosis to a practice wide screening for osteoporotic fracture risk in people over 50 years. The clinical data required is similar and some of the data required for FRAX is collected for other uses. However because this is a new tool it is not expected that all the required data will be being collected systematically.

### First cycle

It is suggested that the first pass of the audit should be primarily used to discover the gaps. It is suggested to start with an easily defined subgroup, for example post-menopausal women attending for a cervical smear test. This allows the opportunity to use some of the consultation time to collect any data found to be missing.

Clinical risk factors for osteoporosis
BMI<19
Previous fragility fracture
Current glucocorticoid treatment expected to be >3/12
Identified secondary cause of osteoporosis

The first part of the audit asks the question, is there any clinical risk factor for osteoporosis already identified? The audit then goes through a systematic check of the factors related to osteoporosis to see if there are any unidentified clinical risk factors. This is the same data that is required to calculate osteoporotic fracture risk (see table on next page). Having checked through the data, and collected any missing items, osteoporotic fracture risk can then be calculated.

Gaps may be expected in:

1. identifying osteoporosis risk and recording it in agreed areas of the notes
2. processes to collect and recording of the data required
3. calculation of osteoporotic risk

It is expected that the main gaps will be found in routinely ascribing osteoporotic risk to clinical risk factors and in data collection. Processes to collect the data required and to check for risk will need to be established and targets/standards set.

### **Possible screening opportunities**

- Cervical cytology – 3 yearly cervical screening presents an ideal osteoporosis risk screening opportunity particularly in women >45yrs age
- Chronic disease management review e.g., hypertension, IHD, CVA/TIA, DM, asthma, COPD
- Drug monitoring – DMARDs, anticoagulation, thyroid disease, vitamin B12
- Medication reviews
- Menopause management
- New patient health check
- Opportunistic screening e.g. obvious height loss in older person
- All wrist and hip fractures in adult patients – ED letters are source of information

## Data required for FRAX: possible strategies for systematic collection

Data	Strategies
<b>Age</b>	Baseline demographic data
<b>Gender</b>	
<b>Weight</b>	Serially as part of routine consultation
<b>Height</b>	Serially as part of routine consultation (see previous fragility fracture)
<b>BMI</b>	Calculated when weight and height available Calculated as part of CVRA
<b>Previous fragility fracture</b>	Evidence of fragility fracture can be collected in three circumstances: <ul style="list-style-type: none"> <li>▪ Loss of height greater than 0.5 cm per year</li> <li>▪ Fracture occurring which in a healthy person would not have resulted in a fracture e.g. fracture resulting from a fall from standing height or less</li> <li>▪ Diagnosed on vertebral x-ray (loss of height of vertebra)</li> </ul> Serial height measurement (aim for yearly). Screening of ED letters & XR reports.
<b>Current glucocorticoid</b>	Reminders attached to prescriptions of glucocorticoids Three monthly ongoing audit of glucocorticoid prescriptions
<b>Parental history of hip fracture</b>	Ask at screening
<b>Smoking status</b>	As part of routine consultation
<b>Alcohol intake</b>	As part of routine consultation
<b>Secondary causes of osteoporosis</b>	
<b>BMD</b>	If available
<b>General strategies</b>	Increasing patient awareness of osteoporotic fracture risk – poster in waiting room. Patient information  An information pamphlet that includes a description of FRAX is available from: <a href="http://www.shef.ac.uk/NOGG/NOGG_Information_for_patients.pdf">http://www.shef.ac.uk/NOGG/NOGG_Information_for_patients.pdf</a>

## Diagnosing a fragility fracture

Evidence of fragility fracture can be collected in three circumstances:

- Loss of height greater than 0.5 cm per year
- Fracture occurring which in a healthy person would not have resulted in a fracture e.g. fracture resulting from a fall from standing height or less
- Diagnosed on vertebral x-ray (loss of height of vertebra)

## Secondary causes of osteoporosis include:

- Rheumatoid arthritis
- Untreated hypogonadism in men and women e.g.
  - menopause before the age of 45 years – natural or hysterectomy
  - anorexia nervosa
  - medication for breast and prostate cancer
- Prolonged immobility – including any condition that restricts mobility
- Organ transplantation
- Type 1 diabetes
- Hyperthyroidism
- Gastrointestinal disease associated with malabsorption
- Chronic liver disease – cirrhosis or severe cholestatic liver disease
- Chronic obstructive pulmonary disease
- Drugs – e.g. anticonvulsants, cyclosporin, chemotherapeutic agents, anti-androgens and anti-oestrogens etc. (excluding glucocorticoid use which is recorded elsewhere).

# Audit data

## Eligible people

All people over the age of 50 years with a known risk factor for osteoporosis

## Sample size

The number of eligible patients will vary according to your practice demographic. It is suggested to start 15 patients per practice or practitioner. If you identify more, take a random sample of 15 patients whose notes you will audit.

## Analysis

Use the data sheet to record your data and calculate percentages.

In cycle one use these percentages to set standards to be met in cycle two. Standards are suggested in this protocol but may be set at a practice/practitioner level. Discussion amongst peers may be useful in establishing standards.

# Data sheet – cycle 1

## Audit: Identifying Patients at Risk of Osteoporosis

1. 15 consecutive people, > 50 years, with at least one identified risk factor for osteoporosis / osteoporotic fracture																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	%
2a. Data required to calculate osteoporotic fracture risk recorded in notes:																	
Age																	
Gender																	
Weight																	
Height																	
BMI																	
Previous fragility fracture																	
Glucocorticoid prescription																	
Parental history of hip fracture																	
Smoking status																	
Alcohol intake																	
Secondary causes identified																	
BMD (if known)																	
2b. Osteoporotic fracture risk able to be calculated																	
3. Calculated osteoporotic fracture risk																	

# Data sheet – cycle 2

## Audit: Identifying Patients at Risk of Osteoporosis

1. 15 consecutive people, > 50 years, with at least one identified risk factor for osteoporosis / osteoporotic fracture																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total	%
2a. Data required to calculate osteoporotic fracture risk recorded in notes:																	
Age																	
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BMI																	
Previous fragility fracture																	
Glucocorticoid prescription																	
Parental history of hip fracture																	
Smoking status																	
Alcohol intake																	
Secondary causes identified																	
BMD (if known)																	
2b. Osteoporotic fracture risk able to be calculated																	
3. Calculated osteoporotic fracture risk																	

# Identifying opportunities for CQI

## Taking action

The first step in taking action is to identify where gaps exist between expected and actual performance and decide on priorities for change.

Once priority areas for change have been decided on, an action plan should be developed to implement any changes.

The plan should assign responsibility for various tasks to specific members of the practice team and should include a timeline.

It is important to include the whole practice team in the decision-making and planning process.

It may be useful to consider the following points when developing a plan for action (RNZCGP 2002).

### 1. Problem solving process

- What is the problem or underlying problem(s)?
- Change it to an aim.
- What are the solutions or options?
- What are the barriers?
- How can you overcome them?

### 2. Overcoming barriers

- Identifying barriers can provide a basis for change.
- What is achievable? – find out what the external pressures on the practice are and discuss ways of dealing with them in the practice setting.
- Identify the barriers.
- Develop a priority list.
- Choose one or two achievable goals.

### 3. Effective interventions.

- No single strategy or intervention is more effective than another, and sometimes a variety of methods are needed to bring about lasting change.
- Interventions should be directed at existing barriers or problems, knowledge, skills and attitudes, as well as performance and behaviour.

# Review

## Monitoring change and progress

It is important to review the action plan against the timeline at regular intervals with the practice team. It may be helpful to discuss the following questions:

- Is the process working?
- Are the goals for improvement being achieved?
- Are the goals still appropriate?
- Do you need to develop new tools to achieve the goals you have set?

Following the completion of the first cycle, it is recommended that practices complete the first part of the CQI activity summary sheet (Appendix 3).

## Undertaking a second cycle

In addition to regular reviews of progress with the practice team, a second audit cycle should be completed in order to quantify progress on closing the gaps in performance.

It is recommended that the second cycle be completed within 12 months of completing the first cycle. The second cycle should begin at the data collection stage. Following the completion of the second cycle it is recommended that practices complete the remainder of the clinical audit summary sheet.

## Claiming MOPS credits

This audit has been endorsed by the RNZCGP as a CQI Activity for allocation of MOPS credits. General practitioners taking part in this audit can claim credits in accordance with the current MOPS programme. This status will remain in place until August 2011.

To claim MOPS points, you can indicate completion of the audit on the annual claim sheet, or alternatively you can go to the RNZCGP website, and claim your points at “MOPS online” at [www.rnzcgp.org.nz](http://www.rnzcgp.org.nz)

As the RNZCGP frequently audit claims you should retain the following documentation, in order to provide adequate evidence of participation in this audit:

1. A summary of the data collected.
2. A Continuous Quality Improvement Activity summary sheet (included as Appendix 3).

# Appendix 1: RNZCGP Summary Sheet – CQI Activity

**DOCTORS NAME**

The activity was designed by (please tick appropriate box):

RNZCGP

Organisation e.g. IPA/PHO/BPAC (name of organisation)

bpac<sup>nz</sup>

Individual (self)

**TOPIC**

**Identifying Patients at Risk of Osteoporosis**

Describe why you chose this topic (relevance, needs assessment etc):

## FIRST CYCLE (10 credits)

**1. DATA**

**Information collected**

Date of data collection:

Please attach:

- A summary of data collected **or**
- If this is an organisation activity, attach a certificate of participation.

**2. CHECK**

Describe any areas targeted for improvement as a result of the data collected.

**3. ACTION**

Describe how these improvements will be implemented.

**4. MONITOR**

Describe how well the change process is working. When will you undertake a second cycle?

## SECOND CYCLE (10 credits)

<b>1. DATA</b>	<b>Information collected</b>
Date of data collection:	
Please attach:	
<ul style="list-style-type: none"><li>▪ A summary of data collected <b>or</b></li><li>▪ If this is an organisation activity, attach a certificate of participation.</li></ul>	
<b>2. CHECK</b>	Describe any areas targeted for improvement as a result of the data collected.
<b>3. ACTION</b>	Describe how these improvements will be implemented.
<b>4. MONITOR</b>	Describe how well the change process is working.
<b>COMMENTS</b>	



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