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## General practitioners or orthopaedic surgeons—who's responsible for the gap in osteoporosis management?

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### Introduction

Minimal trauma fracture (MTF), defined as a fracture sustained from a fall from standing height, is a signal that osteoporosis may be present as an underlying condition requiring further investigation. Even though osteoporosis has been operationally defined by the WHO since the 1990s and measures to assess bone density and to calculate fracture risk are well developed<sup>1</sup>, osteoporosis remains a major, worldwide public health burden. Despite an increase in reliable diagnostics and widely available treatments for osteoporosis, there remains persistent underdiagnosis and undertreatment of osteoporosis in primary care.<sup>2,3</sup> It is predicted that osteoporosis or osteopenia will affect 6.2 million Australians over the age of 50 years by 2022 at an estimated total cost of \$3.84 billion. The rate of fractures is expected to increase by 30% with the prospect of 183,105 fractures per year.<sup>4</sup>

The gap in care following MTF, when a patient is treated for the fracture but fails to receive follow-up management and treatment for prevention of future fractures, is described by Harrington (2011)<sup>5</sup> as *The Bermuda Triangle of Osteoporosis Care*. Orthopaedic Surgeons view their role as managing the fracture and the role of the primary care physician to manage the osteoporosis disease. However, general practitioners (GPs) are often not informed that the patient has experienced a fracture so are unaware of the need to investigate or treat osteoporosis, thus the gap in care continues to widen.

One measure to try to ameliorate the osteoporosis care gap and prevent secondary fractures has been the establishment of Fracture Liaison Services (FLS) in hospitals servicing larger populations. Outcome measures indicate that while these are having some effect on reducing refracture rates<sup>6,7</sup> they are still only capturing a small percentage of the population<sup>2</sup>. The availability of Bone Mineral Density (BMD) screening to determine osteoporosis risk in rural and regional areas is limited<sup>8</sup> and access to screening decreases with increasing remoteness. Recent RACGP osteoporosis guidelines note that "bone densitometry utilisation rates are significantly lower in rural and remote areas when compared to regional and urban areas" and this is a specific gap that needs to be addressed.<sup>17</sup>

There has been limited research regarding osteoporosis management in rural and regional areas. This study aimed to explore the attitudes and beliefs of Orthopaedic Surgeons and GPs towards osteoporosis management in order to determine if the gap in osteoporosis care, which has been identified worldwide, also exists in rural and regional areas of Australia. These two professional

groups were chosen as both potentially have significant roles in the management of MTF, orthopaedic surgeons primarily within the hospital system and general practitioners in primary care.

## Method

A mixed methods design was used consisting of two postal questionnaires and a series of twelve semi-structured interviews. Following a review of the literature, separate questionnaires were developed for Orthopaedic Surgeons and GPs to elicit their opinions about the general management of osteoporosis following MTF and the roles and responsibilities of health personnel. The questions were predominantly multiple choice requiring either single or multiple ranking responses with seven common questions asked of both groups. Approval for the study was granted by an institutional Human Research Ethics Committee.

The names of 69 Orthopaedic Surgeons providing services in remoteness categories RA 2-5 in south-eastern Australia were selected from practice information from the Royal Australian College of Surgeons website and the internet and a list of 203 GPs working in one Local Health District (LHD) (predominantly RA 2-3) was accessed. Three female and three male GPs, one female and five male Orthopaedic Surgeons were purposively selected for individual interviews.

Participants were mailed an invitation letter introducing the study one week prior to receiving the project package containing a participant information sheet, a questionnaire and a self-addressed stamped envelope. An option to return completed questionnaires by facsimile was provided and no remuneration was offered to participants. Within a fortnight, 23 of the 69 (33%) of questionnaires from Orthopaedic Surgeons were returned and 47 out of 203 (23%) questionnaires were returned from GPs. A reminder was sent to all participants four weeks after the initial mail out. Practice managers at 30 general practices were telephoned as an additional reminder for GPs.

The second stage of the study involved six semi-structured interviews with Orthopaedic Surgeons in three LHDs and six interviews with GPs practicing in one LHD. Interviewees from three different geographical regions, a range of practice types from solo, small group and large group practices in remoteness locations RA 2-5 were selected to enable as wide a range of views as possible to be collected. All interviews were recorded using a portable recording device and transcribed in full for analysis.

SPSS Inc. (Version 22; Chicago, IL, USA) software was used to carry out descriptive statistics and Pearson's chi-square ( $\chi^2$  test) was used to analyse categorical variables, with significance set at  $p < 0.05$ . Interviews were analysed using a computer-aided qualitative analysis software, NVivo 10 (QSR International Pty Ltd., 2012). The process involved analytic comparison where researchers independently read and annotated the transcripts before discussing and comparing key ideas. The data were then coded using NVivo 10 which enabled attribution of information to nodes which were combined into key themes. Themes were checked and refined following team discussion within the context of concepts identified in the research literature.<sup>9</sup>

## Results

### Questionnaire results

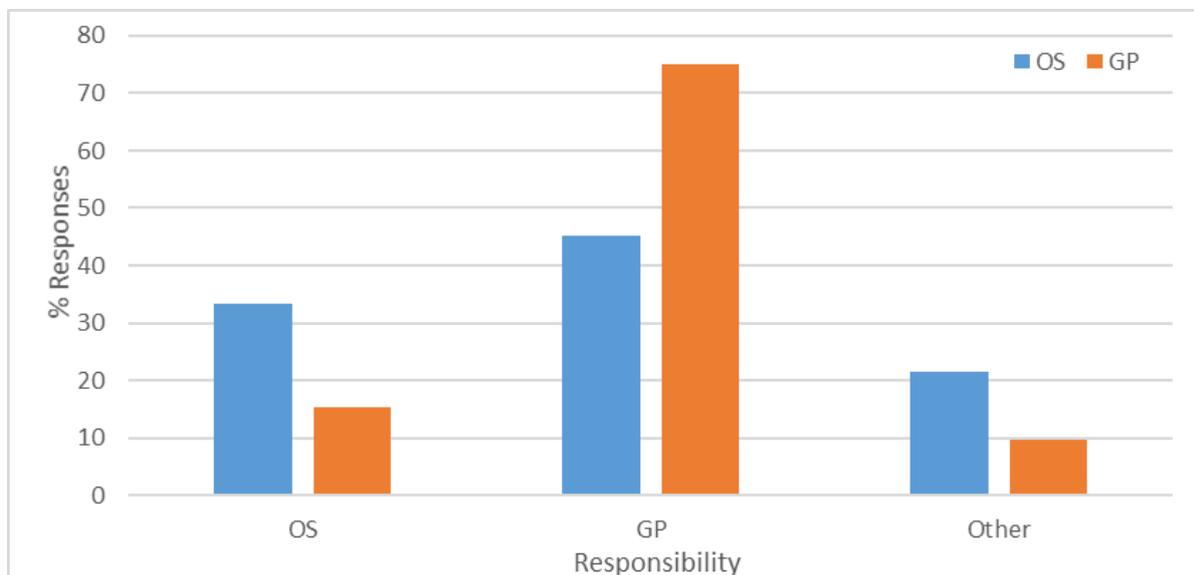
The overall response rate from questionnaires was 60.8% (42/69) for Orthopaedic Surgeons and 35.5% (72/203) for GPs. The gender ratio was close to 50:50 for GP respondents, however, only three female Orthopaedic Surgeons (7.1%) responded to the questionnaire. Almost 44% of GPs and

38% of Orthopaedic Surgeons were aged  $\leq 45$  years. Almost 45% of the GPs and 33.3% of Orthopaedic Surgeons reported having  $\geq 20$  years' experience.

Almost 90% (88.1%) of Orthopaedic Surgeons thought that osteoporosis was managed well in the community by some while 98.6% of GPs felt that osteoporosis was managed well at least by some in primary care. Almost 95% (94.4%) of GPs and 67.5% of Orthopaedic Surgeons [ $\chi^2(1)=14.239$ ,  $p<0.001$ ] thought that the most appropriate healthcare professional to **initiate discussion about osteoporosis** was the GP, however, 14.3% of Orthopaedic Surgeons felt it was their responsibility. The main three reasons given by Orthopaedic Surgeons for **not initiating osteoporosis treatment** following MTF were: (1) that it was not their responsibility (47.6%), (2) they lacked time (40.5%) and (3) they were concerned about the side effects of treatment (23.8%). More Orthopaedic Surgeons (23.8%) than GPs (6.8%) were concerned about the side effects of treatments. The barriers for GPs not initiating treatment were: (1) they were not informed that the patient had sustained an MTF (48.4%), (2) the patient declined treatment (23%) and (3) the patient was not suitable for treatment (24%). Other reasons GPs gave were that no recommendations were provided in the hospital discharge letter (6.8%) or the specialist had not recommended treatment (3.4%).

There was a significant difference between GPs and Orthopaedic Surgeons about whose role it was to assume leadership in osteoporosis diagnosis [ $\chi^2(2)=10.203$ ,  $p=0.006$ ] (Figure 1). Three quarters of GPs felt that they should assume leadership in osteoporosis diagnosis whereas only 42.5% of Orthopaedic Surgeons agreed that GPs should take that role [ $\chi^2(1)=10.202$ ,  $p=0.001$ ]. One third (33%) of Orthopaedic Surgeons also thought that it is their **role to diagnose** osteoporosis. Fifteen percent of the GPs surveyed agreed that the responsibility for diagnosis of osteoporosis following MTF should be with Orthopaedic Surgeons (Figure 1).

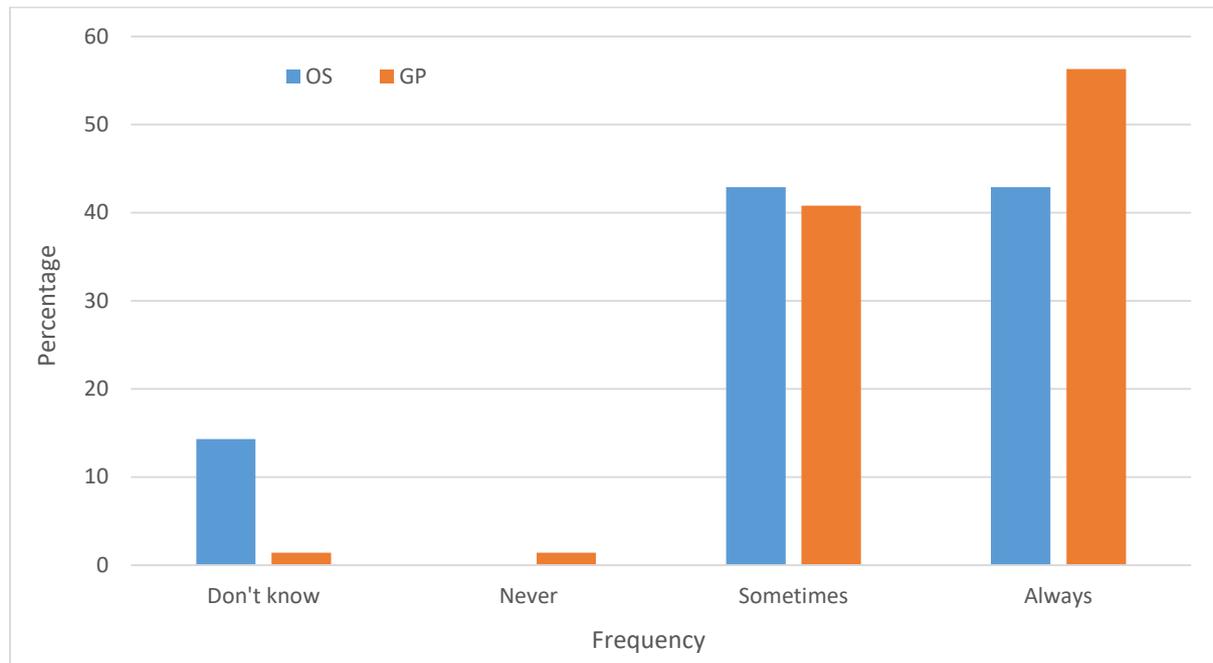
**Figure 1** Responsibility for diagnosis of osteoporosis following minimal trauma fracture



There were no significant differences in who GPs and Orthopaedic Surgeons thought should **initiate treatment** of osteoporosis following MTF with 72% of Orthopaedic Surgeons and 81% of GPs agreeing that it should be the responsibility of the GP. Almost all (94%) GPs and 85.7% of Orthopaedic Surgeons thought that it was the GP's role to **manage osteoporosis** (FET,  $p=0.170$ ). No GPs or Orthopaedic Surgeons indicated that Orthopaedic Surgeons should assume responsibility for the ongoing management of osteoporosis.

When asked as to **who should order a BMD scan** for a patient to investigate for osteoporosis, 71.4% of Orthopaedic Surgeons felt it was the domain of the GP and 86% of GPs agreed that it was their role ( $p=0.055$ ). Almost 56% of GPs indicated that patients who have not had a BMD scan within the past two years should always be followed up with a BMD following MTF, which was similar to 43% of Orthopaedic Surgeons who reported the same (Figure 2).

**Figure 2** Need to follow-up patients following minimal trauma fracture who have not had a bone mineral density scan <2years ago



Respondents were asked to rate the **quality of co-ordination** of osteoporosis patient care between hospital and general practice and around 30% of both groups described it as satisfactory or good, while the remaining 70% considered it to be either unsatisfactory or poor. When GPs were asked to indicate any factors that may impact upon their decision to initiate an osteoporosis workup in a post MTF patient, 97% either agreed or strongly agreed that they would do so if it was indicated in the hospital discharge letter. In addition, 98.6% of GPs either agreed or strongly agreed they would initiate an osteoporosis workup if it was indicated in the patient follow-up letter from the orthopaedic surgeon.

Almost all (97.2%) GPs and 81% of Orthopaedic Surgeons either agreed or strongly agreed that if the Orthopaedic Surgeon discusses osteoporosis with a patient following MTF, it improves patient compliance with management (FET,  $p=0.005$ ).

Orthopaedic Surgeons were asked if they felt there was a need for more **education for Orthopaedic Surgeons** about osteoporosis management following MTF and 26% stated they felt limited information was available, 53% felt plenty of information was available, while 12% agreed there was plenty of information available but not accessed. GPs were asked if they felt there was a need for increased **primary care education** and one third thought limited information was available, 21% felt that information was available but not accessed. A similar proportion of Orthopaedic Surgeons indicated that there was a need for primary care education.

The majority of participants in the interview component of the study were male. While the gender split for GPs was 50:50, only one of six Orthopaedic Surgeons was female. Interviews lasted from 21 to 55 minutes.

Through qualitative analysis of the interviews, several main themes were identified. Key quotes for the following themes have been included (Table 1); salience of osteoporosis, perception of roles, diagnosis of osteoporosis, treatment of osteoporosis, communication and enablers.

## Discussion

There was general consensus that the role of the Orthopaedic Surgeon was to “fix the fracture and send them home” (OS1) and the role of the GP was to manage osteoporosis as a disease. A difference in opinions arose as to whether the Orthopaedic Surgeons had a responsibility to **raise the issue of osteoporosis** with a patient when they were in the acute stage of an MTF. GPs interviewed felt strongly that Orthopaedic Surgeons have a significant role in mentioning osteoporosis to the patient at the time of fracture and it should be a key element in the discharge summary. Studies, such as one carried out across twenty hospitals in North West England,<sup>10</sup> have indicated that Orthopaedic Surgeons can play an influential role in GP follow-up and patient compliance if further assessment for osteoporosis is suggested by the orthopaedic surgeon at the time of fracture.<sup>11</sup>

Opinions as to who is **responsible for the diagnosis** of osteoporosis varied with Orthopaedic Surgeons stating that patients should be assessed for osteoporosis while hospitalised with an MTF but not necessarily by an orthopaedic surgeon, “at least make sure they are assessed by someone while they are in hospital, be it physicians or ortho-geriatricians” (OS1). Another reflected that treatment after an MTF was not “an easy fix” and the GP should be notified so they could be responsible for organising a BMD. It appears that while Orthopaedic Surgeons felt it was important for osteoporosis to be addressed, only one third of those surveyed felt it was their role to do so.

Several of the GPs interviewed felt that the “message as to what we should be screening for is not always clear” (GP4) with patient eligibility and cost of screening raised as issues. This is consistent with opinions expressed by many GPs revealed in a meta-analysis of effectiveness of osteoporosis interventions.<sup>12</sup> The Orthopaedic Surgeons expressed concern about the effectiveness of BMD testing to accurately diagnose osteoporosis. There was mixed use of fracture calculators (FRAX) by GPs to diagnose osteoporosis as some felt that they were time consuming and did not supply enough information while others considered them to be useful but over simplified the risks with some patients. None of the Orthopaedic Surgeons used a FRAX calculator but several assumed that a patient aged over 70 years with an MTF would be osteoporotic and therefore did not require testing.

Orthopaedic Surgeons and GPs commented that **treatment** for osteoporosis was complicated and at times confusing despite the availability of published guidelines, particularly regarding the duration of treatment and side effects of bisphosphonate medications. Overall, the GPs supported the use of bisphosphonates as a treatment option but were wary of the use of calcium supplements as felt it was controversial. The lack of specific knowledge about which patients should be investigated and treated for osteoporosis was also identified as a barrier to effective osteoporosis management in a recent study of primary care practitioners in Sydney.<sup>2</sup>

**Table 1 Summary of interview data reduction process and themes**

Representative quotes	Initial themes	Principal themes
<p>"I tell patients the risk of falls or osteoporosis in older people is worse than the risk of them having cancer" (GP2).</p> <p>"It's not that I'm not interested, I just don't have time to do that..." (OS2).</p> <p>"We weren't taught about it, it was assumed you knew about it and it wasn't pushed" (OS1).</p>	<ul style="list-style-type: none"> <li>• Importance of osteoporosis to GPs</li> <li>• Importance of osteoporosis to Orthopaedic Surgeons</li> <li>• Importance of osteoporosis to patients</li> <li>• Culture of practice</li> <li>• Barriers for Orthopaedic Surgeons</li> </ul>	Salience of osteoporosis
<p>"I think the best model is to get everything back to the GP" (OS3).</p> <p>"...it is a GP disease" (GP3).</p> <p>"We're quite good at treating the fractures and quite bad at ignoring the terrible bone" (OS3).</p> <p>"I can't keep up with what is the best way to give it (medication) to everybody and that's why I leave it to somebody else" (OS2).</p>	<ul style="list-style-type: none"> <li>• Role of Orthopaedic Surgeon</li> <li>• Role of GP</li> <li>• What Orthopaedic Surgeons think GPs should do</li> <li>• What GPs think Orthopaedic Surgeons should do</li> <li>• First contact</li> <li>• Use of Endocrinologist</li> </ul>	Perceptions of roles
<p>"Some of the evidence for screening for osteoporosis is still on the lower scale of evidence" (GP4).</p> <p>"There's the online calculators and things. I don't honestly use them. It's just too much time" (GP1).</p> <p>"I just do it in my head" (OS2).</p>	<ul style="list-style-type: none"> <li>• Who should diagnose</li> <li>• Testing</li> <li>• Use of FRAX calculator</li> <li>• Need for earlier diagnosis</li> <li>• Diagnosis of osteoporosis</li> </ul>	Diagnosis of osteoporosis
<p>"There are a lot of complexities in the osteoporosis industry" (GP3).</p> <p>"There is lots of conflicting information for me let alone the patients to try to work out what they should and shouldn't do" (OS2).</p> <p>"I find the information less clear about when to cease the medication..." (GP4).</p>	<ul style="list-style-type: none"> <li>• Balancing treatment options</li> <li>• Confusion over treatment</li> <li>• Medications</li> <li>• Elderly patients</li> <li>• Barriers for patients</li> <li>• Barriers for GPs</li> </ul>	Treatment of osteoporosis
<p>"In the reports and letters back rarely is it mentioned" (GP3).</p> <p>"Probably the most important thing I can do is write 'copy back to the GP'" (OS2).</p> <p>"It would be nice to get a little heads up from the ED or from the specialist who has treated their fracture to say think about osteoporosis and can you please follow-up" (GP5).</p>	<ul style="list-style-type: none"> <li>• Communication from hospital to GP</li> <li>• Communication between Orthopaedic Surgeons and GPs</li> <li>• Communication between Orthopaedic Surgeons and patients</li> <li>• Public versus private patients</li> </ul>	Communication
<p>"The main thing is that GPs have to know that the patient has had a fracture so we have to get that message back in a more timely fashion" (OS1).</p> <p>"Hospitals are good places for acute care and identification of problems, flagging of things and coming back to their medical home in general practice" (GP4).</p>	<ul style="list-style-type: none"> <li>• Systems approach</li> </ul>	Enablers

None of the Orthopaedic Surgeons interviewed prescribed bisphosphonates stating that it was “just too much follow-up” (OS2) or were wary of potential side effects of the drugs such as necrosis of the jaw, “the maxillary guys have frightened me, that’s why I leave it” (OS3). Opinions on the treatment options for elderly patients was considered problematic with several of the Orthopaedic Surgeons commenting that “there is certainly a trend for more and more of our fractures in the last five years to be the very very elderly, very frail end of the spectrum” (OS3) which raised the question of the usefulness and efficacy of drug treatments.

One of the issues constantly raised by GPs was that they are often not informed that the patient has received treatment for a MTF. When a fracture occurs, the patient is treated in an acute hospital setting then discharged, often with no discussion of further investigation for osteoporosis or verbal advice to raise the issue with their GP in a subsequent visit. Recent interventions to increase the initiation of osteoporotic treatments<sup>13</sup> observed that a 12-month “window of opportunity” exists for MTF patients to be commenced on treatment for osteoporosis. When Orthopaedic Surgeons were asked about methods they used to notify GPs that an osteoporosis workup for a post MTF patient should be considered, about half stated they didn’t specifically follow-up on the issue or relied on the hospital to communicate this. This reflects similar findings by Inderjeeth and colleagues in Western Australia (2018) where it was noted that patients presenting to a tertiary hospital Emergency Department with an MTF often had no osteoporosis investigation nor was the fracture documented in a patient discharge summary.<sup>3,7</sup>

There was strong consensus between GPs and Orthopaedic Surgeons that there is a **need for a system** to be established within the hospital where the patient is identified, a pathway is set up, and patient liaison is established to ensure assessment and education is instigated, all prior to discharge (OS4). Other suggestions included the development of a protocol for inpatients which could be utilised by registrars or resident doctors on the ward to identify patients requiring osteoporosis assessment (OS1).

These ideas are not new<sup>14</sup> and Ganda et al (2013)<sup>15</sup>, in their analysis of models of care for secondary prevention of osteoporosis, identified Type A models of care using a designated fracture liaison co-ordinator as the most co-ordinated approach. However, for treatment rates to be raised from their current sub-optimal status, integrated electronic health system databases need to be utilised and these can be costly and often resource-intensive. Other barriers to implementing co-ordinated care include the need for standardisation of “fracture language” and the improved identification and coding of MTFs within all rural hospital-based facilities.<sup>14</sup>

The success of multi-disciplinary team approaches<sup>16</sup> encompassing an electronic flagging system and establishment of a referral pathway to identify and manage patients with high risk of refracture requires a committed and co-ordinated team effort which over time becomes embedded into normal practice. However, there is often limited availability of a designated person to take responsibility and coordinate communication between the acute admission and follow-up when the patient returns to their rural centre.

## Conclusion

This study, conducted in rural and regional Australia, revealed general agreement among GPs and Orthopaedic Surgeons that osteoporosis is an important issue which remains undertreated and not optimally managed. Differences in opinion exist as to when and by whom the issue of further investigation for osteoporosis should be raised, and obvious communication breakdown exists between hospital discharge and referral back to primary care. If responsibility for osteoporosis

management post MTF in rural areas lies with primary care, systems need to be implemented to ensure the local primary care physician is alerted to the need for osteoporosis follow-up. There is also the need to facilitate health service activity for the detection and management of osteoporosis in rural and remote areas where the bone densitometry utilisation rates are significantly lower when compared to regional and urban areas.

## References

1. Curtis EM, Moon RJ, Harvey NC, Cooper C. The impact of fragility fracture and approaches to osteoporosis risk assessment worldwide. *Bone*. 2017; 104:29-38.
2. Mendis AS, Ganda K, Seibel MJ. Barriers to secondary fracture prevention in primary care. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2017;28(10):2913-9.
3. Milat F, Ebeling PR. Osteoporosis treatment: a missed opportunity. *The Medical journal of Australia*. 2016;205(4):185-90.
4. Watts J, Abimanyi-Ochom J, Sanders K. Osteoporosis costing all Australians a new burden of disease analysis – 2012 to 2022. Sydney: Osteoporosis Australia; 2013.
5. Harrington JT. A decade of system- and population-based osteoporosis care improvement. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2011;22 Suppl 3:483-6.
6. Davidson E, Seal A, Doyle Z, Fielding K, McGirr J. Prevention of osteoporotic refractures in regional Australia. *The Australian journal of rural health*. 2017;25(6):362-8.
7. Inderjeeth CA, Raymond WD, Briggs AM, Geelhoed E, Oldham D, Mountain D. Implementation of the Western Australian Osteoporosis Model of Care: a fracture liaison service utilising emergency department information systems to identify patients with fragility fracture to improve current practice and reduce re-fracture rates: a 12-month analysis. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2018;29(8):1759-70.
8. Macgregor CB, Meerkin JD, Alley SJ, Vandelanotte C, Reaburn PJ. Osteoporosis and low bone mineral density (osteopenia) in rural and remote Queensland. *The Australian journal of rural health*. 2018;26(5):369-74.
9. Meadows KA. So you want to do research? 3. An introduction to qualitative methods. *British journal of community nursing*. 2003;8(10):464-9.
10. Chami G, Jeys L, Freudmann M, Connor L, Siddiqi M. Are osteoporotic fractures being adequately investigated? A questionnaire of GP & orthopaedic surgeons. *BMC family practice*. 2006;7:7.
11. Tosi LL, Gliklich R, Kannan K, Koval KJ. The American Orthopaedic Association's "own the bone" initiative to prevent secondary fractures. *The Journal of bone and joint surgery American volume*. 2008;90(1):163-73.
12. Laliberte MC, Perreault S, Jouini G, Shea BJ, Lalonde L. Effectiveness of interventions to improve the detection and treatment of osteoporosis in primary care settings: a systematic review and meta-analysis. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2011;22(11):2743-68.

13. Roux S, Gaboury I, Gionet-Landry N, Garant MP, Beaulieu MC, Carrier N, et al. Using a sequential explanatory mixed method to evaluate the therapeutic window of opportunity for initiating osteoporosis treatment following fragility fractures. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2018;29(4):961-71.
14. Adler RA, Bates DW, Dell RM, LeBoff MS, Majumdar SR, Saag KG, et al. Systems-based approaches to osteoporosis and fracture care: policy and research recommendations from the workgroups. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2011;22 Suppl 3:495-500.
15. Ganda K, Puech M, Chen JS, Speerin R, Bleasel J, Center JR, et al. Models of care for the secondary prevention of osteoporotic fractures: a systematic review and meta-analysis. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2013;24(2):393-406.
16. Giles M, Van Der Kallen J, Parker V, Cooper K, Gill K, Ross L, et al. A team approach: implementing a model of care for preventing osteoporosis related fractures. *Osteoporosis international: a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA*. 2011;22(8):2321-8.
17. The Royal Australian College of General Practitioners and Osteoporosis Australia. *Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age*. 2nd edn. East Melbourne, Vic: RACGP, 2017.

## Presenter

**Dr Jane Anderson-Wurf** (B App Science, Grad Dip Ed TESOL, B. Primary Education Studies, PhD) has 30 years' experience teaching English to speakers of their languages (TESOL) and extensive experience working with refugees in the Murrumbidgee region as more than 10 years ESOL teacher and 3.5 years as Manager of Australian Migrant English Program (AMEP). Jane has proven experience in developing health education resources for training on cultural competency and resources for GP supervisors 'Communication Skills Toolbox: for clinicians engaged with International Medical Graduates', developed with funding received from CoastCityCountry General Practice training (CCCTGP) with a \$100,000 grant over two years. Her previous work with Murrumbidgee LHD included a series of cultural competence training workshops with nursing staff at MLHD targeting issues for staff working with culturally diverse patients and working successfully with colleagues from differing cultural backgrounds (2013-2014). Jane has evaluation experience from program evaluations and reports for MMLL, including: Preventative Health Initiative Evaluation (2013); Report on Care Co-ordination and Supplementary Services, part of Closing the Gap (2013); Report on Primary Health Care Initiatives (2014); Murrumbidgee District Aboriginal Health Consortium Plan (2016). Jane is a research fellow with a PhD in rural health, with extensive research in cultural competency, international medical graduate workforce, aged care and osteoporosis management.