

Breaking the fragility fracture cycle

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Received: 21 February 2011 / Accepted: 13 April 2011 / Published online: 24 May 2011
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Fracture begets fracture. This phenomenon has been well-characterised in many prospective studies and summarised by meta-analyses [1, 2]; a prior fracture at least doubles a patient's future fracture risk. Elevated fracture risk persists for up to 10 years after the initial fracture event [3] and is greatest during the first year after this [4]. Several studies have explored this phenomenon from the obverse view of fracture history in patients presenting to hospital with a hip fracture. In 1980, Gallagher and colleagues reported prior fracture history amongst patients presenting with hip fracture in Rochester, USA for the period 1965–1974 [5]. Sixty-eight percent of women and 59% of men had suffered at least one other fracture besides their hip fracture. More recent studies from the UK [6], USA [7] and Australia [8]

have consistently reported that 45% or more of today's hip fracture patients have a prior fracture history.

These epidemiological data reveal a stark truth; almost half of hip fracture patients provide us with an obvious opportunity for preventive intervention. Tragically, numerous studies from across the world have found that health-care systems are failing to respond to the first fracture to prevent the second [9, 10]. This special issue of *Osteoporosis International* focuses on post-fracture coordinator-based models that have been shown to close the secondary prevention management gap.

The systematic review conducted by Sale and colleagues [11] considered published models of case-finding systems in the orthopaedic environment. The reviewers sought to evaluate the structure, protocols, staffing and outcomes of different models and categorise them by the key elements present in each program. Sixty-five percent formally described the role of a dedicated coordinator who identified patients, facilitated BMD testing and the initiation of osteoporosis treatment. A clear message is that coordinator-based models circumvent the challenge of where clinical responsibility resides for osteoporosis care of the fragility fracture patient.

The Glasgow Fracture Liaison Service (FLS) has provided clinically effective post-fracture osteoporosis care for the one million residents of Glasgow, Scotland for the last decade [12]. McLellan and colleagues' formal cost-effectiveness analysis of the Glasgow FLS [13] provides crucial health economic information in the prevailing austere economic climes. An estimated 18 fractures were prevented, including 11 hip fractures, and £21,000 (€23,350, US\$34,700) was saved per 1,000 patients managed by the FLS versus "usual care" for the United Kingdom. To date, approximately one third of the UK's 61 million residents are served by an FLS. McLellan has

Related articles can be found at doi:10.1007/s00198-011-1534-0, doi:10.1007/s00198-011-1544-y, doi:10.1007/s00198-011-1638-6 and doi:10.1007/s00198-011-1642-x.

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estimated that universal access for the UK could be achieved at a cost of £9.7 million (€10.8 million, US\$16 million), which represents 0.6% of the £1.7 billion (€1.9 billion, US\$2.8 billion) [14] estimated annual cost of hip fracture care alone to the UK economy.

In response to the emerging evidence on the clinical and cost-effectiveness of coordinator-based models of care, the Fracture Working Group of the International Osteoporosis Foundation (IOF) has published an IOF Position Paper [15] in this issue. The Position Paper summarises the clinical and cost-effectiveness case for coordinator models, considers practical experience that is transferable between healthcare systems and describes steps to achieve consensus amongst professionals, patients and policymakers. Sharing of best practice to drive change at a national level is intended to support colleagues to make fragility fracture prevention a political priority across the world.

Half of hip fracture patients give us considerable advance notice that one day they will visit their local orthopaedic unit. Harrington has previously described osteoporosis care of fragility fracture patients as "... a Bermuda Triangle comprised of orthopaedic surgeons, primary care physicians and osteoporosis experts, into which the fracture patient disappears" [16]. The lack of clear clinical responsibility that underpins this description can be eliminated by implementation of post-fracture coordinator-based models of care.

Over the next 20 years, 450 million people will celebrate their 65th birthday [17]. On account of this, absolute hip fracture incidence will remain high and costly in the West and presents a major threat to financing of health systems in the East. Dell and colleagues have made the case that a systematic approach can translate to a 25% reduction in the incidence of hip fractures versus the expected rate [18]. This is a realistic aspiration for healthcare systems that take aggressive steps to close the secondary fracture prevention care gap. As the baby boomers begin to retire from early 2011, professional organisations, patient societies and policymakers all recognise that failure to do so is not an option.

Conflicts of interest None.

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