

PP385: Fracture Risk Assessment in a Primary Care Population: Case Finding Using Routine GP Data, FRAX<sup>®</sup> & RAIDR<sup>®</sup> in the UK Terry Aspray<sup>1,2</sup>, Erica Whalley<sup>3</sup>, Sharon Abdy<sup>1</sup>, Valerie Maddison<sup>3</sup>, Mike Scott<sup>4</sup>, Rachel Wright<sup>3</sup>, Steve Summers<sup>5</sup>, Steve Turley<sup>6</sup>, Lesley Kay<sup>1</sup>

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Table 1. Ten-year Major & Hip fracture risks for patients on & off treatment (mean[range])

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Introd	IICTION
	uction:

		On Oste	eoporosis	treatment	Not on Osteoporosis treatment							
	Age	Major $FR_{10}$	Hip FR <sub>10</sub>	Hip FR <sub>10</sub> >10%	Major $FR_{10}$	$Hip\ FR_{10}$	Hip FR <sub>10</sub> >10%					
	Years	Risk (%)	Risk(%)	(%/GP)	Risk (%)	Risk(%)	(%/GP)					
F	59.5	22[1.3-55]	11[0-49]	45[0-75]	8[1-56]	3[0-47]	7.6[0.6-12.3]					
Μ	57.3	9[1.8-24]	4[0-20]	9[0-67]	4[1-27]	1[0-24]	0.6[0-0.9]					
All	58.4	19[1.3-55]	10[0-49]	38[0-60]	6[1-56]	2[0-47]	4.0[0.2-6.5]					

Fracture Risk Assessment using FRAX<sup>®</sup> estimates 10-year fracture risk (FR<sub>10</sub>) at major sites & the hip. RAIDR<sup>®</sup> (short for "Reporting, Analysis & Intelligence Delivering Results") uses information *dashboards* to synthesise clinical data for reporting and presentation in primary care. In Newcastle upon Tyne, UK in 2012, it was agreed that FRAX<sup>®</sup> and RAIDR<sup>®</sup> could be used to share data between General Practice (GP), Clinical Commissioning Groups & local hospitals to identify patients at high FR<sub>10</sub>.

### Methods:

FRAX<sup>®</sup> & RAIDR<sup>®</sup> were used to assess routine GP data for 120,478 patients (50.2% female) from 37 GP practices, aged 40-90 years. FR<sub>10</sub> was estimated & hip FR<sub>10</sub> >10% was used to indicate high fracture risk. Data were included on prescribed osteoporosis treatments (bisphosphonates, strontium ranelate, raloxifene,

Figure 1. Mean & range of 10-year Major & Hip fracture risks for patients on & off treatment

10 year risk of Major Fracture (%) 10 year risk of Hip Fracture (%) 10 year risk of Hip Fracture (%) 10 year risk of Hip Fracture (%) F on Rx F on Rx M on Rx M on Rx All Rx

denosumab & teriparatide)

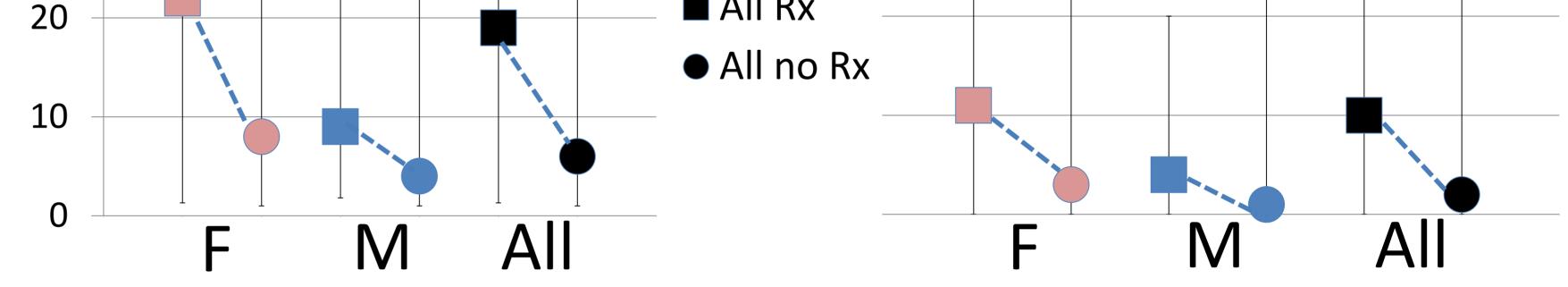
## Results

Table 1 & Figure 1 present mean[range] major & hip fracture risks for patients on and off treatment. Patients at higher fracture risk are being treated, with the mean major  $FR_{10}$  three times greater & mean hip  $FR_{10}$  five times greater in those on treatment. Results were presented to GPs in an *Osteoporosis Dashboard*.

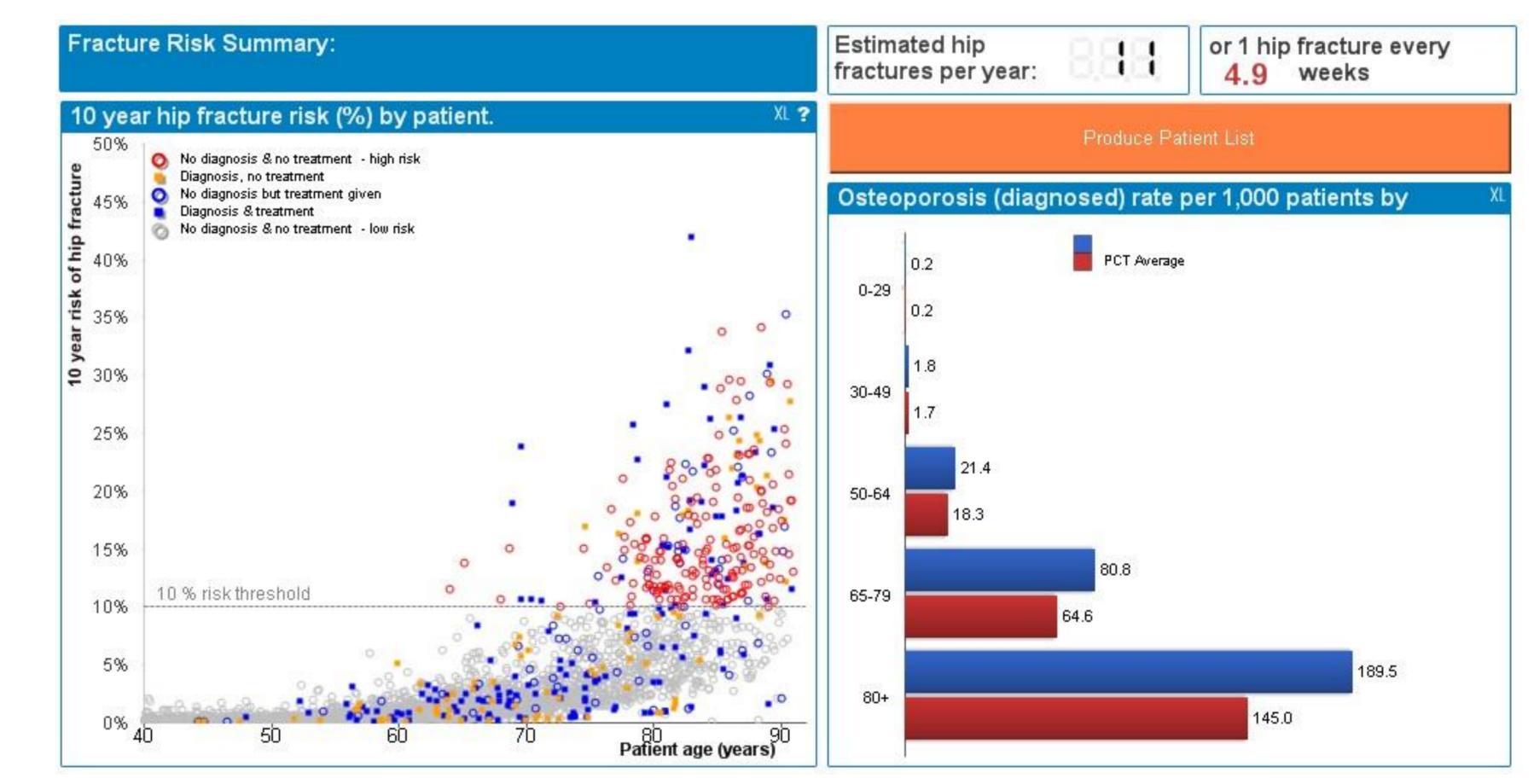
## Discussion

Even using conservative estimates from routine GP data, untreated patients with  $FR_{10}$  at the hip up to 47% were identified. Variations may be due to differences in demography, case finding or data quality.

# However, information can be fed back using the RAIDR<sup>®</sup> *Osteoporosis Dashboard* (Figure 2), which presents hip FR<sub>10</sub> for all patients. It includes the predicted number of



#### Figure 2. Osteoporosis Dashboard, showing 10-year hip fracture risk



fractures in the next 12 months and a "benchmark" against other GP practices in the city. Each point on the scatterplot represents a patient, identifying whether osteoporosis is diagnosed and treated in each case. Clicking on a patient brings up his/her source data, including the effect on  $FR_{10}$  of positive responses to unknowns e.g. parental hip fracture (Figure 3). Using FRAX<sup>®</sup> and RAIDR<sup>®</sup>, we aim to:

- Improve data quality and utility.
- Focus case finding on GP practices with higher untreated fracture risk.
- Target treatment to patients at high fracture risk.

**Conflict of interest: None reported** 

#### Figure 3. Osteoporosis Dashboard, showing risk factors

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Red			 30.6%													30/07	//2012	22K	Body mass index - observation	26
		2.0%						%		3.9%						29/07	//2011	Ub173	Alcohol units per	30
%	8	22						- A		120210								Verset Cholory	week	50
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