There is a global human resources for health (HRH) crisis, with an absolute shortage of >4 million skilled health workers.1 In developed countries, this is partly because of increasing demands for healthcare with ageing populations and fewer young people available and opting to go into the health professions.2,3 In developing countries a combination of factors lead to poor investment in production and retention of health professionals, especially in rural and remote areas.4-6 'Pull' and 'push' factors in developed and developing countries, respectively, contribute to the migration of health professionals, typically from poorer to wealthier areas.7-9

The recruitment and/or migration of health workers has been in the spotlight, especially with the adoption of the Millennium Development Goals (MDGs) which include health-specific targets10,11 the attainment of which is linked to functional health systems, and, therefore, a credible workforce. This issue received more attention following the Joint Learning Initiative report and the World Health Report in 2006.1 The focus has been on the ethics of recruiting health professionals from developing countries which can ill-afford to lose them.12 This practice has been referred to as 'the Great Brain Robbery',13,14 while others considered such recruitment as ethical, and that the concerns were misplaced or uncalled for.15,16

Migration of health professionals results from complex considerations partly reflecting the pull and push factors that health workers operate under and the globalisation of healthcare.1,17 There has been much effort to find ways to manage migration of health professionals without disadvantaging them or their countries origin.18-21

A target of international discourse on health worker migration has been active recruitment, which often involves advertising in professional journals.13,22 Many initiatives have been aimed at curbing active recruitment.23-25 Persistent pressure from African countries contributed to the development, negotiation and adoption of the WHO Code of Practice on the International Recruitment of Health Workers in May 2010.26 The stated intention of most initiatives includes protecting poorer nations from further losses of health professionals; e.g. the Commonwealth Code notes in its preamble: 'Some countries are responding to the problem by systematically recruiting nurses, midwives, doctors, pharmacists, and other healthcare workers from other countries, in particular from developing countries. Whilst this is helping some recipient countries to overcome their staff and skills shortages, it deprives source countries of knowledge, skills, and expertise for which large amounts of resources have been expended. Although this type of international recruitment provides many health workers with opportunities to develop their careers, gain valuable experience, and improve living conditions for themselves and their families, it has also resulted in negative experiences for others.' The purpose is stated as, inter alia, 'The Code is intended to discourage the targeted recruitment of health workers from countries which are themselves experiencing shortages.'

South Africa (SA) presents an interesting health worker migration scenario: it is a destination country for many foreign health professionals,27 it is a transit country for migrants who do not intend to stay in SA, and it is a source country for developed countries, especially the UK, New Zealand (NZ), Australia and Canada.27-29 That SA relies heavily on foreign health professionals was emphasised at the 2011 Rural Doctors Conference: 'Foreign doctors, the backbone of SA rural healthcare delivery...' 'The Mpumalanga public sector would collapse without foreign doctors (80% are foreign qualified) ...'27

Health professionals may be recruited by active recruitment e.g. employment agencies or employment seminars/bazaars where representatives of prospective employers present their clients' cases to prospective recruits. The Southern African Migration Project (SAMP) studied the 2000 - 2004 recruitment advertising trends in SA, largely based on advertisements that appeared in the South African Medical Journal (SAMJ). Among the findings were that on average there were 504 foreign advertisements per year (2 522 in total), mainly for the UK, NZ, Australia and Canada, in that order.31 The SAMJ is the most reputable medical journal in SA, and invariably

Corresponding author: Y M Dambisya (yoswa.dambisya@ul.ac.za)
carries local and international advertisements for doctors. In view of the attempts to manage international recruitment of health workers over the past decade,\textsuperscript{20,21,23,25,26} we were interested to know whether the pattern of advertising for doctors in the \textit{SAMJ} had changed since the 2000 - 2004 review. We therefore reviewed all 60 \textit{SAMJs} from January 2006 to December 2010, for foreign advertisements for doctors. These findings were compared with those of the earlier review.\textsuperscript{30}

**Methods**

Advertisements for foreign posts in 60 issues of the \textit{SAMJ} from January 2006 to December 2010 were retrospectively reviewed. Data collected included the country of opportunity stated in the advertisement or position advertised, and the channel of communication/contact point. The recruiting agency was not recorded, partly because this was seldom stated on the advert.

The advertising section of each journal was searched for 'Foreign Opportunities' content. Relevant details – country of opportunity/source of advertisement, type of contact information given, the advertising agency where mentioned, and the total number of advertisements in an issue – were recorded, with a breakdown of the countries to which the advertisements pointed. Where an advertisement included opportunities in more than one country, this was recorded as one advertisement, but each of the countries mentioned was noted with the advertisement in the final analysis.

**Results**

There were 1 176 foreign advertisements for doctors/medical personnel in the \textit{SAMJ} from January 2006 to December 2010: 355 in 2006 (average 29.6 per month), 283 (average 23.6 per month) in 2007, 242 (average 20.2 per month) in 2008, 175 (average 14.6 per month) in 2009 and 121 (average 10.08 per month) in 2010. The figures indicate a one-third decline in the number of advertisements published in the \textit{SAMJ} for this period, from nearly 30 per month to just over 10 (Fig. 1). The advertisements tended to include only email contact, and rarely (international) telephone numbers.

The originating countries were primarily Australia at 428 (36.4%), Canada 286 (24.3%), NZ 191 (16.2%), the UK 108 (9.2%), and Ireland 44 (3.7%). Nineteen (10.1%) others were the United Arab Emirates (UAE), Saudi Arabia and 2 African countries – Namibia and Botswana. Table 1 shows the trends in annual numbers per main advertising country. There was a decline in numbers for all countries except the UK, which registered an apparent rise from 12 in 2008 to 19 in 2009 and 18 in 2010. For the African and Middle East countries, there was a fall in 2008 followed by a rise in 2009 and 2010 – attributable mainly to more advertisements for opportunities in those 2 years from Namibia (12), the UAE (8) and unspecified worldwide opportunities (10). Fig. 2 shows the relative contribution of the different countries in each year.

**Discussion**

Our main findings are that there was a steady decline in the total number of foreign advertisements for doctors from 355 in 2006 to 121 in 2010; and that the foremost 4 countries of opportunities for the 5 years were Australia, Canada, NZ and the UK. The 2000 - 2004 review by Rogerson\textsuperscript{30} recorded 2 522 advertisements, at an average total of 504 foreign advertisements per year with a ranked order of the UK, NZ, Australia and Canada.

The total number of advertisements dropped for all the top 4 countries except for Australia, where the number rose from 409 (16.2%) in 2000 - 2004 to 428 (36.4%) in 2006 - 2010; but the number of advertisements for Australia also dropped considerably in 2009 and 2010. Canadian advertisements declined from 313 to 286 for

<table>
<thead>
<tr>
<th>Country</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
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<tbody>
<tr>
<td>Australia (428)</td>
<td>113</td>
<td>123</td>
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<tr>
<td>Canada (286)</td>
<td>83</td>
<td>72</td>
<td>52</td>
<td>50</td>
<td>29</td>
</tr>
<tr>
<td>NZ (191)</td>
<td>76</td>
<td>44</td>
<td>39</td>
<td>20</td>
<td>12</td>
</tr>
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<td>19</td>
<td>12</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Ireland (44)</td>
<td>13</td>
<td>6</td>
<td>16</td>
<td>7</td>
<td>2</td>
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<tr>
<td>Others* (119)</td>
<td>30</td>
<td>19</td>
<td>17</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>355</td>
<td>283</td>
<td>242</td>
<td>175</td>
<td>121</td>
</tr>
</tbody>
</table>

* Others include unspecified worldwide opportunities (N=54): Namibia (n=22), UAE (n=16), Saudi Arabia (n=3), Bahrain (n=4), Botswana (n=2), and Vanuatu, Bahrain, Gibraltar, The Netherlands and Belgium (1 each).
the second review period, while the percentage contribution to the total number of advertisements doubled from 12.4% to 24.3%. Advertisements from the UK registered the most notable decrease – from 895 (35.5%) in 2000 - 2004 to 108 (9.2%) in 2006 – 2010, and <2 advertisements per month in 2010. NZ also registered a sharp decline from 550 (21.8% of the total) in 2000 - 2004 to 191 (16.2%) in 2006 - 2010.

Whereas advertisements do not provide information on their recruiting success, recruiters and facilities place advertising in expectation of a return on investment. Consequently, it is possible that it has become increasingly less worthwhile to advertise for doctors in the SAMJ. Another inference is that possibly it has become ‘politically incorrect’ to actively recruit doctors from SA, perhaps owing to pressure from global moves to stem active recruitment of health professionals from developing countries. That policy would apply particularly to the UK, which, in addition to the Commonwealth Code of Practice (2003)21, issued its own policy guidelines in 2004, with the commitment that ‘No active recruitment will be undertaken in developing countries by UK commercial recruitment agencies, or by any overseas agency sub-contracted to that agency, or any healthcare organisation unless there exists a government-to-government agreement that healthcare professionals from that country may be targeted for employment’.22

Furthermore, SA signed a Memorandum of Understanding (MoU) with the British government, whereby the UK committed to impose a moratorium on recruitment of health professionals from SA.23 No similar MoUs were signed with the other top 3 countries, which would not explain the one-third decline in NZ advertisements. The considerable decline of UK advertisements may be more due to geopolitical changes in Europe than to the HRH crisis in developing countries. With expansion of the European Union (EU), health professionals from Eastern Europe could work in the EU, including the UK, which was obliged to employ them ahead of applicants from elsewhere, including SA. On the other hand, Australia, NZ and Canada were not affected by the opening up of the EU. Further support for the limited effect of the Commonwealth Code is the observation that, whereas the Code was adopted in 2003,24 the UK accounted for 42.1% of advertisements in 2004, which matched the combined advertising from Australia, Canada and NZ.

Another possible consideration could be differing health systems in the top 4 countries. The UK National Health System (NHS) is publicly funded and centralised, notwithstanding trusts functioning as implementing agencies, and the ease for policies to be implemented across the country. The NZ healthcare system is closer to that of the NHS, with the ministry of health exercising ultimate control over district health boards. In Canada, health service delivery is managed by the provinces, while in Australia the states are responsible for healthcare. The application of international policy, such as the voluntary Commonwealth Code, may not be a local government priority that may take decisions to recruit health workers. However, it is possible that apparent similarities between the health systems in NZ and the UK on the one hand, and Canada and Australia on the other, are incidental to the declines in advertising.

A limitation of our study was that the reasons for the trends were not apparent from the data examined, nor could we ascertain the effect of the reduction in number of advertisements on the number of doctors recruited from SA over that time. Ancedotal reports suggest that the number of doctors emigrating has slowed down recently and that some migrants have started returning (Percy Mahlati, personal communication). These explanations remain speculative, although likely in the context of global HRH developments. This study also points to the utility of bilateral arrangements, which may be partly responsible for the reduction in active recruitment of health professionals from SA by UK agencies. These trends should also be understood from the perspective that the review period was characterised by intensive lobbying by African countries and civil society to curb migration or provide compensation, for instance via the World Health Assembly (WHA) and high-level meetings that focused on the HRH crisis.

Attention will soon focus on implementation of WHA Resolution 63.16 Code of Practice on the International Recruitment of Health personnel.25 While providing an ethical and human rights framework that guides destination and source countries to mitigate HRH migration via international agreements and national policies, it is also voluntary. It is unlikely that any of the observed trends could be attributed to the Code, as it had been in existence for less than a year at the time of this study.

It would be interesting to compare the trends in number of doctors that were recruited over the period under review, though such figures are difficult to obtain.26

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