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REPLY

Earlier diagnosis of breast cancer outside of a screening programme

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Although it is not directly related to our viewpoint discussion (Viewpoint: Breast cancer screening: the questions answered. *Nat. Rev. Clin. Oncol.* **9**, 599–605; 2012),[1] Lyratzopoulos and Abel (Earlier diagnosis of breast cancer: focusing on symptomatic women. *Nat. Rev. Clin. Oncol.* doi:10.1038/nrclinonc.2012.126-c1)[2] bring up an important perspective on the effect of disparities in the presentation of breast cancer in symptomatic (diagnostic) clinics.

The authors point out the difference in women presenting outside of a screening programme compared with those that attend.[2] In countries with national breast screening programmes starting at the age of 50 years, the majority of women presenting with breast cancer are seen outside of screening, and are referred to as symptomatic patients.[3]

In the UK, the number of interval cancers exceeds screen-detected cancers, but this may be due to the 3 years between screens.[4] Similar data were found in a report from Norway published in 2001.[5] Therefore, these findings might not be directly applicable in the USA, where screening is annual. Also, there is anecdotal evidence from clinics in the USA that the majority of breast cancers occur in women younger than 50 years.

One of the first goals of the multidisciplinary teams that were developed for assessment of abnormalities found at screening in Europe was the introduction of the team approach into the hospital setting, replacing the work originally done by a general surgeon.[6] This move to the multidisciplinary approach to breast cancers allowed the rapid growth in knowledge and early 'tailored' treatment for all women with breast cancer. This approach was the precursor of current 'personalized' treatment.

Development of symptomatic clinics (in the UK) had its own problems. Simultaneous campaigns for 'breast awareness' along with young celebrities being treated for breast cancer meant that these newly developed clinics were swamped by the 'worried well'.[7] Patel *et al.*[8] argued for referral guidelines for symptomatic clinics to be followed rather than following targets, to reduce unnecessary referrals.

The inequalities among the elderly, referred to by the authors,[2] is not necessarily a done deal. The increased incidence of breast cancer in older women has to be balanced by the fact that a greater proportion will have a malignancy that will not necessarily kill them. Esserman *et al.*[9] found that the proportion of good-prognosis cancers as determined by the Netherlands 70-gene signature (MammaPrint®) significantly increases as age increases. Although it is possible to reduce morbidity by advancing the stage of diagnosis, the effects on mortality might not be as significant.

It is true that research has mainly centered on screening and new approaches to treatment. I agree with the authors that more research should be applied to the evaluation of the performance of symptomatic clinics, and how better education, communication and health awareness interventions might reduce these disparities. Opportunity also exists for us to provide important information to these women about their breast density, and their own personalized risk and strategies for risk reduction, where appropriate.

An example of how this might be done was demonstrated in the USA, where Miranda *et al.*[10] found a striking disparity among different Hispanic subgroups who underwent screening mammography. In most women in the USA, the Healthy People 2010 mammography goal (70%) was achieved between 1996 and 2007; Puerto Rican and white women, had the highest mammography rates, and Black and Cuban women had rates that approached the 2010 goal. However, Mexican Latinas did not change their mammography use and remain below the standard. The message of this study is clear and underscores the importance of disaggregating racial and ethnic data when developing health policies and research interventions.

In low-income countries, the same trends of disparities in screening and access to modern treatment are seen[11] and could potentially be addressed by partnership with high-income countries. This type of collaboration is becoming feasible now that telemedicine is regarded as mature technology.

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Competing interests
The author declares no competing interests.

1. Autier, P., Esserman, L. J., Flowers, C. I. & Houssami, N. Viewpoint: Breast cancer screening: the questions answered. *Nat. Rev. Clin. Oncol*. **9**, 599–605 (2012).
2. Lyratzopoulos, G. & Abel, G. Earlier diagnosis of breast cancer: focusing on symptomatic women. *Nat. Rev. Clin. Oncol*. http//dx.doi.org/10.1038/nrclinonc.2012.126-c1.
3. Sauven, P. *et al.* The National Health Service Breast Screening Programme and British Association of Surgical Oncology audit of quality assurance in breast screening 1996–2001. *Br. J. Surg*. **90**, 82–87 (2003).
4. Bennett, R. L., Sellars, S. J. & Moss, S. M. Interval cancers in the NHS breast cancer screening programme in England, Wales and Northern Ireland. *Br. J. Cancer* **104**, 571–577 (2011).
5. Wang, H. *et al.* Interval cancers in the Norwegian breast cancer screening programme: frequency, characteristics and use of HRT. *Int. J. Cancer* **94**, 594–598 (2001).
6. Perry, N. *et al.* European guidelines for quality assurance in breast cancer screening and diagnosis. Fourth edition–summary document. *Ann. Oncol*. **19**, 614–622 (2008).
7. [No authors listed]. Guidelines for surgeons in the management of symptomatic breast disease in the United Kingdom. *Eur. J. Surg. Oncol.* **21** (Suppl. A), 1–13 (1995).
8. Patel, R., Smith, D. & Reid, I. Delay in diagnosis in breast cancer. *Lancet* **353**, 2154–2155 (1999).
9. Esserman, L. J. *et al.* Impact of mammographic screening on the detection of good and poor prognosis breast cancers. *Breast Cancer Res. Treat*. **130**, 725–734 (2011).
10. Miranda, P. Y., Tarraf, W., González, P., Johnson-Jennings, M. & González, H. M. Breast cancer screening trends in the United States and ethnicity. *Cancer Epidemiol. Biomarkers Prev*. **21**, 351–357 (2012).
11. Yip, C. H. & Taib, N. A. Challenges in the management of breast cancer in low- and middle-income countries. *Future Oncol*. **8**, 1575–1583 (2012).