

Reflections on the USPSTF breast screening recommendations from a South African perspective

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Recent recommendations from the USA on the benefit of mammography for certain age groups have the potential to be indiscriminately applied in other countries, especially with regard to entry age for screening examinations and medical insurance cover. There exists a grave danger that specific local factors may be overlooked if these recommendations are simply taken as gospel and are not considered carefully.

Mammographic screening for breast cancer has been instrumental in the rapidly declining mortality of breast cancer in the western world. Mortality reductions of up to 60% in the screened population, including 40- to 49-year-old women, have been reported.¹⁻⁴

However, recently, the United States Preventative Services Task Force (USPSTF), an internationally recognised, independent panel of non-federal experts in primary care, prevention and research methods that makes evidence-based recommendations to guide the delivery of clinical preventive services,⁵ issued a recommendation⁶ that is widely interpreted as indicating that mammographic screening has no benefit in 40- to 49-year-old women. There is already evidence of insurers denying cover for screening mammography to women in this age group on this recommendation, as the USPSTF has a major influence on funding decisions in health care. This has led to a major upheaval in popular and scientific environments, also in South Africa.

Before the recommendations of the USPSTF are uncritically applied in South Africa, a rational reflection on the recommendations of the USPSTF is warranted. In order to do that, it is important to dissect what the USPSTF said in the first place, examine the environment for which the USPSTF made its recommendations and then consider if there is any relevance for the South African context.

The USPSTF 2009 update of recommendations reads as follows: "The USPSTF recommends against routine screening mammography in women aged 40 to 49 years. The decision to start regular, biennial screening mammography before the age of 50 years should be an individual one and take into account patient context, including the patient's values regarding

specific benefits and harms. The USPSTF emphasizes the adverse consequences for most women who will not develop breast cancer."⁶

The USPSTF stated that the benefit of mammographic screening for this age group is small and must be weighed against the "harms" being done by screening. These "harms" are: psychological harm to the patient in the form of distress and anxiety if she is recalled for further work-up; physical harm due to interventional procedures such as biopsies; and finally systemic harms in the form of excess cost due to unnecessary biopsies and treatment of cancer.

It is important to realise that screening in the USA follows a "community" or "in-service" model as opposed to "organised" screening as for example performed by the NHS in the United Kingdom or Breast Screen Australia. It is well documented that, in contrast to organised screening, less stringent quality controls are applied in community screening and quality parameters of outcome vary widely.⁷

The potential for "harm" being done is much greater in a community screening setting than in organised screening.

A comparison of more than four million screening mammograms done in the USA versus the NHS is instructive: Women in the USA were three times as likely to be recalled for further work-up and much more likely to undergo an open biopsy in theatre.⁸ It has to be borne in mind that the USA figures in the paper were reported by screening-interested parties, in which case results should be expected to be better than in routine practice. The cautious approach of the USPSTF is therefore understandable for an age group in which the benefits of screening are likely to be small.

What are the implications for South Africa then? Reliable, recent age-adjusted incidence rates for breast cancer are not available. Elsewhere, the earlier onset of breast cancer in non-white populations with an increased incidence rate of up to 2.5 times is well documented.^{9,10} Such racial stratification of medical research is routine elsewhere, but is currently not acceptable in South Africa,¹¹ and the potential consequence

– racial profiling for access to health services – even less so. In the absence of hard data, it seems reasonable to expect an increased benefit for screening in 40- to 49-year-old women in South Africa versus countries with predominantly Caucasian populations.

As a next issue, the harm generated by screening should be investigated. South Africa, like the USA, follows a “community” type of screening model. While the Radiation Control Board maintains tight control over the radiation parameters of mammography and adverse health effects of radiation exposure of screening mammography are extremely unlikely, there is no control of the quality parameters of mammography reading.

We are still the only South African group that has published peer-reviewed data on mammography readings in state hospitals as well as private practice settings.^{12,13} In 40- to 49-year-old women we reported a recall rate of 4.7%, a biopsy rate of 1.9% and a cancer diagnosis rate of 3.8%. An update, presented at the scientific congress of the American Society of Breast Surgeons in May 2010 and in press at the *Annals of Surgical Oncology*, has confirmed these data.¹⁴ In addition, more than 95% of all biopsies in our centre are done interventionally. The figures, which are in line with best international practice, indicate that even in a resource-restricted environment harm can be minimised. Does this hold true also for the rest of South African screening units? Experience from other community screening environments suggests that this may not be so.⁷ We do not expect quality control regulations similar to those of the European Union¹⁵ to be enacted and enforced in South Africa in the foreseeable future. We have argued previously that, to introduce at least a minimum of performance assessment, screening units should analyse their performance according to a set of simplified performance parameters and publish the analysis for scrutiny by interested parties, from women to health funders to regulatory authorities. This would ensure that the scarce resources in health care are applied wisely and that harm is minimised. These analyses would also provide data to definitively settle the issue of the age at which regular screening should begin in our country. The currently available data indicate that that age should be 40 years.

References

- Dixon JM. Screening for breast cancer. *BMJ* 2006 Mar 4;332(7540):499–500.
- Jones AL. Reduction in mortality from breast cancer. *BMJ* 2005 Jan 29;330(7485):205–6.
- Kopans DB. Beyond randomized controlled trials – Organized mammographic screening substantially reduces breast carcinoma mortality. *Cancer* 2002 Jan 15;94(2):580–1.
- Tabar L, Yen MF, Vitak B, Chen HHT, Smith RA, Duffy SW. Mammography service screening and mortality in breast cancer patients: 20-year follow-up before and after introduction of screening. *Lancet* 2003 Apr 26;361(9367):1405–10.
- Guirguis-Blake J, Calonge N, Miller T, Siu A, Teutsch S, Whitlock E. Current processes of the U.S. Preventive Services Task Force: refining evidence-based recommendation development. *Ann Intern Med* 2007 Jul 17;147(2):117–22.
- Screening for breast cancer: U.S. Preventive Services Task Force recommendation statement. *Ann Intern Med* 2009 Nov 17;151(10):716–236.
- Elmore JG, Nakano CY, Koepsell TD, Desnick LM, D’Orsi CJ, Ransohoff DF. International variation in screening mammography interpretations in community-based programs. *J Natl Cancer Inst* 2003 Sep 17;95(18):1384–93.
- Smith-Bindman R, Ballard-Barbash R, Miglioretti DL, Patnick J, Kerlikowske K. Comparing the performance of mammography screening in the USA and the UK. *J Med Screen* 2005;12(1):50–4.
- Marie SG, Haslam SZ, Azzouz F. Breast cancer among young African-American women: a summary of data and literature and of issues discussed during the Summit Meeting on Breast Cancer Among African American Women, Washington, DC, September 8-10, 2000. *Cancer* 2003 Jan 1;97(1 Suppl):273–9.
- Hisham AN, Yip CH. Spectrum of breast cancer in Malaysian women: overview. *World J Surg* 2003 Aug;27(8):921–3.
- Ncayiyana DJ. Racial profiling in medical research: what are we measuring? *S Afr Med J* 2007 Dec;97(12):1225–6.
- Apffelstaedt JP, Steenkamp V, Baatjes K. Performance data of screening mammography at a dedicated breast health centre. *S Afr Med J* 2008 Dec;98(12):950–3.
- Mouton JP, Apffelstaedt J, Baatjes K. Surgical mammography reporting in a limited resource environment. *World J Surg* 2010; In press.
- Apffelstaedt J, Steenkamp V, Baatjes K. Surgeon-Read Screening Mammography: An Analysis of 11,948 Examinations. *Annals of Surgical Oncology* 2010.
- Perry N, Broeders M, de Wolf C, Törnberg S, Holland R, von Karsa R, et al. European guidelines for quality assurance in breast cancer screening and diagnosis . 4th ed. European Communities; 2006.