



## Written evidence submitted by the Institute of Biomedical Science (NHS0029)

The Institute of Biomedical Science (IBMS) is the professional body for biomedical scientists working in the United Kingdom. It represents approximately 20,000 members employed mainly in the NHS, blood, and health protection agency services in the UK, private laboratories, research, industry and higher education.

We are pleased to learn that the Science and Technology Committee is undertaking an inquiry on NHS health screening and welcome the opportunity to offer our knowledge and expertise on the subject of screening programmes.

We appreciate that the subject of health screening generates strong and polarised views but as a scientific organisation, representing a significant proportion of the healthcare science workforce, we recognise and uphold the need for transparency and a justified evidence base of the positive benefits of screening.

*I can confirm that in making this response the Institute of Biomedical Science has no interests to declare and these are our own and independent views. We would therefore wish to make the following comments.*

### 1. Principles of Screening

The World Health Organisation (WHO) national screening principles devised by Wilson and Junger in 1968 remain the standards that must be met before the introduction of a new screening programme or major modification to an existing programme.

- Validity
- Reliability
- Yield
- Cost
- Acceptance
- Follow up services

These factors remain as valid today in the context of population screening, but perhaps the main principle should be to “do no harm”. The breast screening programme is a good example of potential harm from a screening programme. The impact (financial, physical and psychological) of over-investigating disease free individuals should not be underestimated. As scientists we acknowledge that balancing harms and benefits is often very difficult when assessing the introduction of a screening programme. This has been highlighted by the potential move to HPV testing as a replacement primary test for cervical screening. The potential for over treatment of women unless a suitable triage test is used is extremely high. We do however believe that proposals for new screening programmes in the NHS are rigorously scrutinised and a strong evidence base is required before introduction is considered. The rejection of a screening programme for prostatic cancer is an example of a proposal which met very few of the Wilson and Junger principles and undoubtedly the correct decision was made, despite the weight of public pressure.

### 2. Existing Screening programmes

The review of evidence for existing programmes is a more difficult issue. It is felt that once a screening programme is established it may be politically difficult to stop the programme if it no longer meets the above principles. However, the same scrutiny should be applied to existing programmes which have the same potential to do “more harm than good” as to proposed new

programmes. As population age profiles change, target populations should be reviewed to ensure screening programmes reach the most at risk.

### 3. Communication and management of expectation

Communication of screening to the public is a very emotive and contentious area; with respect to the cervical screening programme there is no doubt that the programme claims at the outset were not achievable. The NHS has learned from this and should continue to do so. All screening programmes will have false positive and false negative results. The implications of this must be clearly communicated to the public as part of a risk assessment. Individuals with symptoms must be informed that they should seek medical advice even if the screening test is normal/negative. Equally, the public needs to be clearly informed that small numbers of disease free individuals will be over-treated. There is a potential here to deter the public from attending for screening but the message must be carefully managed to ensure the benefits and potential harm are clearly understood by the public. At present there is an over expectation by the general public of the benefits of screening that is not balanced by an understanding of the risks or an appreciation of the costs.

### 4. Cost:benefit

Greater information on cost:benefit of existing and proposed (publically demanded) screening programmes is key to expectation management and the exercising of informed choice. This could lead to more complex programme management but is better aligned to the personalised medicine approach. For example:

#### *4.1 Cervical Screening*

There is little doubt that the UK cervical screening programmes are the envy of most other countries. The cervical screening programme has saved thousands of lives from a disease that kills thousands of women in other countries. One of our main advantages is a single national screening programme with a single database. Information technology is vital to the success of any programme; the Scottish Cervical Cytology Results System introduced to the Scottish programme in 2007 is an example of best practice and consideration should be given to introducing this to other NHS programmes.

However, women are not informed that if they have been sexually inactive for 10 years and/or have 2 consecutive negative smears within 10 years, with only the one partner – evidence suggests that they do not need more smears unless they become sexually active again or have a new partner(s).

#### *4.2 Breast Screening*

According to Cochrane reviews, there is a 10:1 risk of having unnecessary treatment as a consequence of the breast screening programme. This translates to every 10 screened women undergoing surgery/radiotherapy/chemotherapy which they may not require in order for one woman to receive positive benefit from the programme. If there is a family history of breast or ovarian cancer then, of course, the situation changes; even the recent UK review gave a risk:benefit ratio of 4:1.

#### *4.3 Ovarian cancer screening*

Ovarian cancer screening has a published risk:benefit ratio of 8:1 and we await the results of the screening trial with interest.

#### *4.4 Bowel cancer screening*

Bowel screening - a relevant family history is important but do people realise that there is a real risk of bowel perforation on endoscopy, even in skilled hands – this varies but 1-2% is probably realistic in practice;

#### *4.5 Cardiovascular disease*

UK death rates for cardiovascular related disease are higher than those for cancer, but statins for all are really not necessary and the levels used currently are far too low to make a difference to that rate.

In summary, the Institute of Biomedical Science welcomes the decision of the Science and Technology Committee to undertake an inquiry in to the merits (and risks) of national screening programmes. While there are recognised benefits the individual risks are less well understood by the proposed and actual screened populations. Additionally, the relationship between mass screening and personalised medicine has yet to be considered.