

## **The Clinical Advisory Committee on Diagnostic Imaging**

**Venue:** Portcullis House  
**Date:** 30 January 2007  
**Time:** 13:45- 16:00

**Acting Chair:** Prof John Marshall, Frost Professor of Ophthalmology

### **Present**

**Charlotte Atkins MP**  
Health Select Committee

**Dr Jeremy George**  
Consultant Respiratory Physician, London Thoracic Group

**Dr Ian Gibson MP**  
Norwich, North

**Dr John Giles**  
Clinical Director, Lifescan

**Dr Peter Mace**  
Assistant Medical Director, BUPA Wellness

**Anne Shaw**  
Professional Officer, Society and College of Radiographers

**Dr Rick Steeds**  
Consultant Cardiologist, University Hospital Birmingham

**Dr David Sliney**  
Programme Manager, Laser/Optical Radiation Programme US Army Centre  
for Health Promotion and Preventive Medicine

**Mr Jim Thurston**  
Radiation Protection Advisor, King's College Hospital

### **Apologies**

**Prof John Martin**  
The Centre for Vascular Biology and Medicine

**Dr Stuart Taylor**  
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## **Introduction**

Professor Marshall began the meeting stating that CACODI wishes to inform political policy and to gather information from experts and work in collaboration with COMARE.

Lifescan, who are sponsoring the Committee, represents the interface between private and NHS offering a facility for CT scanning at no capital cost to the NHS. Lifescan complies with all regulations and policy and wishes to ensure it facilitates aspects that go into the pool of safe medical practice.

Dr Silney began the meeting regarding radiation figures. He explained how they fall into three main categories. High Levels of which there are known risks, Low levels which show no proven effect and very low which are probably of negligible risk. The grey area lies somewhere between these. It has been suggested that very low levels of radiation could be beneficial to us.

Ian Gibson asked if radiation levels include radiation from the outside environment.

Prof Marshall agreed that they do. He argued that in terms of our total exposure to radiation the amounts derived from medical imaging are very small. Prof Marshall displayed a pie chart showing the different sources of radiation and their % contribution to the whole. Prof Marshall also pointed out that the resurgence of TB has generated a powerful lobby calling for more screening. The premise is that the more screening, the larger the database for analysis.

Dr Sliney cited that CT radiation levels are lower than those allowed within the occupational limits and considered to be Low Levels. He stated that despite these Low Levels it is always important to use the lowest achievable dose.

Prof Marshall commented that it is easy to determine what constitutes an acute over-exposure but chronic data are more difficult to acquire and extrapolate from.

Mr Thurston explained that the equipment has to be subject to safety regulations. All equipment is regularly tested. All CT scanners are very similar in terms of the amounts of radiation they produce and in terms of the quality of the images.

Prof Marshall said that he knew of very few cases in which the instrument causes problems. He related that all of the problems he recalled were linked to human error. New technology due to come on stream will allow for machine assisted diagnosis minimising the risk of human error.

Ian Gibson agreed that the instrumentation is very reliable.

Prof Marshall argued that, for the most part the public's knowledge of radiation was inadequate but that the safety limits were considered appropriate.

Anne Shaw commented that we should not dismiss possible effects of cumulative radiation exposure: The long-term effect of will not show for many years and will be difficult to see.

Prof Marshall asked if there was any evidence for radiation sensitivity in certain people.

Dr Giles agreed that it is known that some people are more sensitive to radiation than others. He cited that the problem is that we do not know who those people are.

Dr Giles stated that it has become clear through developments in scanning for heart disease, lung cancer and colon cancer that if you can diagnose people earlier then it is possible to make a real difference in outcome. He argued that the technology is very powerful and needs to be used in an appropriate manner with strict protocols. He commented that 1 in 3 people will die of cancer. In the case of colon cancer the lifetime risk is 1 in 20 and 80-90 % of these cases could be avoidable with screening and early diagnosis. Screening for colon cancer was generally well accepted. He suggested that it was futile to wait for people to develop symptoms which, in a significant proportion of patients with heart disease the first symptom was sudden death, and in the case of lung cancer over 90% were at a stage which was advanced and not considered curable. He argued that with early diagnosis significant improvements could be achieved allowing for potential intervention and treatment. Importantly, it allows people to take charge of their individual healthcare and empowers them to make potentially better lifestyle choices.

Prof Marshall asked what the difference is between the effectiveness of targeted, clinician-driven investigative exposure and walk in screening.

Dr Giles explained that he does not treat anyone under the age of 40, which is approximately half of the population and that there is a difference between whole body screening and specific examinations for specific conditions.

Dr George could see no definitive evidence for lung cancer screening in people who are considered to be of low risk. However, CT scanning can improve cardiac risk assessment and this is beneficial and useful in its own right.

Dr Mace argued that within the general population there is very little knowledge or concern about radiation and there is complacency from people who 'wish' to be scanned.

Dr Steeds pointed out that the question should be: "What do people do even when we tell them that they are at high risk? Can we do something to change their outcome and increase life expectancy?"

Dr Mace noted that 30-40% of people would make significant lifestyle changes. CT is a valuable marker and curative therapy in lung cancer is only possible if it's caught early.

Dr George claimed that in the case of lung cancer there is still no evidence from randomised trials to suggest that mass screening would affect overall mortality rates although accepted that there was some evidence from the IELCAP study (NEJM Oct 2006)

A stated concern was how private asymptomatic scanning of low-risk patients could add unnecessary expenditure to the NHS. The patient will present with their scan showing something and further scans have to be taken before it's deemed to be benign. Dr Giles suggested that any extra costs would be more than offset by the benefit of reduced costs from the earlier treatment of treatable conditions found by such private health assessments.

Dr George argued that there are theoretical risks involved in any medical procedure.

Prof Marshall agreed and said that he appreciated there are risks. He suggested that there have always been risks with radiation many of which were unknown, yet we continued to use the technology simply due to the benefits it brings to us. He raised the case of widespread use of feet x-rays at shoe stores, and could not recall any associated problems with that.

Dr George urged that one should still demonstrate a reduction in mortality rates.

Prof Marshall suggested that no one would want to spend money in the NHS unless they could improve the outcome. He asked if it is possible to scan both the heart and lungs in the same scan.

Dr Giles pointed out that at the moment two separate tests are necessary thus the concept of targeted screening. Both would be very low effective doses of radiation.

Prof Marshall asked for some pragmatic input perhaps a series of suggestions from professionals in the NHS and private sector. He suggested looking at CT & MRI together.

Mr Thurston pointed out that the main issue should be what do you do if a patient has been diagnosed as high risk or shown to have early disease. He claimed that whilst there is a relative risk with radiation this must be balanced against the potential benefits. He argued that is true to say that if you test 5000 people you may well give one of them cancer, but you may benefit one in fifty.

Prof Marshall asked how the levels of ionising radiation are regulated.

Mr Thurston explained how the Health and Safety Executive police ionising levels. He demonstrated that there is a big difference between patients and staff levels of radiation. The ionising dosage should always be kept as low as possible. The dosage should be sufficient only to obtain an adequate diagnosis.

The Healthcare Commission are responsible for carrying out the inspections but are not radiation experts. However, he explained that their expertise in auditing is very beneficial.

Prof Marshall asked if the Healthcare Commission are more preoccupied with filling out the paperwork than the actual inspection.

Anne Shaw stated that there is some self-regulation and argued not to dismiss the contribution of the radiologists themselves.

Prof Marshall questioned if the Healthcare Commission have the right staff.

Charlotte Atkins explained that the Healthcare Commission handles a lot of varied work.

Ian Gibson asked if they ever fined anyone or taken them to court.

Mr Thurston agreed that they have never been very effective. "There has never really been direct guidance. They tend to be viewed both as a gamekeeper and a poacher."

Ian Gibson argued for the need for a body that is prepared to take them on.

Prof Marshall concluded that so far as policing on the shop floor goes Lifescan are more than happy to comply but would need to have a framework and some guidance from the Healthcare Commission.

Dr Giles argued that the potential benefits of a screening programme for some common conditions (heart disease, lung and colon cancer) are potentially huge, reminding the committee of the recently published

reversal of mortality trends for cancer in the US, ascribed in part to more effective screening and early diagnosis particularly with colon cancer.

Dr Silney said that he felt screening certainly had been a benefit in the United States.

Prof Marshal concluded the meeting and suggested a further meeting, date to be announced.

**End of meeting**