Expert Witness Supplementary Statement for Tribunal Case

Don Battersby and Anna Smith

vs.

Secretary of State for Defence

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Congenital Effects in the offspring of the British Nuclear Test Veterans Association (BNTVA)

I am writing this Supplementary Report at the request of Dr C. Busby who is representing the Appellants Battersby and Smith in the Pensions Appeals Tribunal.

I understand that it has been accepted in principle that an objective measure of the exposures to ionising radiation at the test sites may be any evidence of excess risk of congenital effects in the offspring of veteran fathers who were stationed at the test sites. Thus whatever the level of dose the Appellants have been argued to be exposed to by the Respondent (the Secretary of State for Defence), if it were seen that the veterans shared a high degree of risk for children and grandchildren showing congenital diseases significantly higher than non-veterans i.e. the public, then this would represent objective evidence that the veterans had shared exposure to some genotoxic experience or material. Their only shared experience was presence at the test sites, and the only plausible genotoxic material at the test sites was ionising radiation. A recent published paper by Schmitz-Feuerhake et al (2016), which I understand has been submitted to these proceedings, shows that genetic effects can be produced by internal exposures at doses which are conventionally very low, and below background.

There have been three studies of the veterans which have indicated such excess risk in samples of the BNTVA, the largest sample being that which was organised by Susan Rabbitt Roff in 1998. However her paper, although suggesting there was an excess risk, was not particularly quantitative. In order to further investigate the data, the University of Dundee was served with a Third Party Disclosure Order to release the questionnaires which had

previously been held in confidence. This the University did and several large files of anonymised scanned questionnaires were provided to Dr Busby, on condition that results would be restricted to the tribunal appeal.

The last of these files was provide in the middle of March, 2016, and Dr Busby arranged for their examination and conversion into numbers of births of children and grandchildren born to all the veterans, and the numbers of congenital malformations in the children and grandchildren. These numbers were copied from the scanned files and written into three large red ledgers. Where cases of congenital disease in the offspring were reported in the questionnaires, those assistants of Dr Busby reducing the questionnaires into numbers copied down what the veteran had written as a description of the congenital condition.

I was sent the total numbers, the ledgers and the original files. Using my specialised knowledge in developmental pathology, I noted down those conditions that were truly congenital effects and this enable the number of major congenital malformations to be counted. These were then compared with national data in the EUROCAT congenital malformation database (which is an authoritative database which is universally employed for such comparisons: www.eurocat.ulster.ac.uk).

In a number of the records the quality of the scan was very poor, making some written text impossible to read. The malformation data in these records was not included. Because the clinical data was reported by the veterans themselves, the level of clinical data presented varied in detail and much was in lay terminology. I adopted a very conservative approach with decisions on inclusion of malformations. For example, there was a considerable level of severe deafness reported among offspring. Some of this may well have been a consequence major congenital neurological damage. However deafness can also be secondary to eg ear infections. Therefore no cases of deafness were included. Similarly cases of 'impaired vision' and 'kidney problems' etc were excluded. Therefore, in my opinion, the data used in estimating malformation rates is more likely to be an underestimate than an overestimate.

The results are as follows.

1. Children

Total number = 2177

Total congenital conditions (excluding cancer) = 215

Relative Risk = 9.97 (95% confidence interval $8.63<RR<11.52$) $p < 10^{-7}$

2. Grandchildren

Total number = 2242

Total congenital conditions (excluding cancer) = 108

Relative Risk = 4.87 (95% confidence interval $4.0<RR<5.92$) $p<10^{7}$

The comparison group was the combined populations of the EUROCAT registries of East Midlands and S. Yorkshire, Merseyside and Cheshire, NW Thames, N.England, SW England and Thames Valley for the period 1991 to 1997 for which the Livebirth prevalence rate for Congenital Anomalies was 10.07 per 1000 births.

These results agree quite well with the later 2006 study by Busby and de Messieres published in 2012 which gave about 9 and 8 respectively for the relative risk in the children and grandchildren in a separate sample of the BNTVA.. They show that the veteran members of the BNTVA have offspring with the very high level of major congenital anomalies compared with the general public. This supports the argument that they were exposed to sufficient radioactivity at the test sites to cause these genetic effects, and presumably therefore, other health effects consequent on such exposures in the individual veterans themselves.

C.V. Howard

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