Written evidence submitted by Dr Sarah Starkey (RES0018)

1. This is an update on the submission made in March 2017 (also included below).

2. UK Governments, and groups commissioned by them, need the information and research which they provide to the public, Members of Parliament and decision makers to be written with integrity. Information should be factually correct and evidence based.


4. Since March AGNIR has been closed down. However, the inaccurate 2012 report has not been withdrawn and advice based upon the report has not yet been updated to accurately reflect the evidence. A new system has been put in place where COMARE (the Committee on Medical Aspects of Radiation in the Environment) will now keep a watching brief on possible radiofrequency health effects. They will do this by looking into the evidence if prompted to do so by the Secretariat (a member of PHE who was also in AGNIR and is part of ICNIRP). The problem is that the Secretariat was a member of AGNIR, responsible for contributing to the factually incorrect and inaccurate AGNIR report. The Secretariat is also a member of ICNIRP, which raises a conflict of interest. ICNIRP set the international exposure guidelines for radiofrequency radiation, but the role of AGNIR and COMARE was, or is, to assess whether there are any adverse effects of wireless signals below the ICNIRP values. Someone responsible for the ICNIRP guidelines cannot speak out against them by admitting that evidence of harm below the values exists. Individuals investigating possible adverse effects below ICNIRP guidelines need to be independent of ICNIRP. They also need to be independent of AGNIR, the group previously responsible for misrepresenting the scientific evidence.

5. Radiofrequency exposures of all children, pregnant women, employees and members of the public throughout the UK are currently based on an inaccurate assessment of the scientific evidence. Action is needed to withdraw the inaccurate report, to update current guidance based on accurate information and to have in place an independent scientific group who are responsible for assessing evidence of adverse health effects from radiofrequency signals, independent of Government, industry, ICNIRP and AGNIR.

6. There also needs to be effective mechanisms in place for incorrect scientific information produced by UK Governments to be challenged.

Submitted March 2017:

7. Scientific integrity is important not only for academic research and publication in scientific journals. The UK Governments produce scientific information and commission scientific reviews which inform the UK Governments, Members of UK Parliaments, decision makers and the public. Decisions are made based on the information with far-reaching consequences for our environment, public health, education, sustainability and industry. It is vital that decisions are based on factually correct, evidence-based and honest scientific information.
8. I would like to mention four examples of scientific information produced by UK Governments, or commissioned by them, which in my view are scientifically inaccurate and/or fall short of the term ‘scientific integrity’. Yet there appear to be no mechanisms in place to challenge scientifically inaccurate information produced by UK Governments. Scientists are faced with many ‘brick walls’, as misleading information is repeated time and time again. For progress in science, society or industry to be sustainable, advances need to be based on the truth. Short-term economic gains can be made by hiding evidence or failing to adequately investigate safety, but this often comes with a human cost, as illustrated by the examples of tobacco, asbestos and lead in petrol.

9. In 2012 Public Health England (PHE)/Health Protection Agency (HPA) commissioned a review of the science on the health effects of radiofrequency fields, by the Advisory Group on Non-ionising Radiation (AGNIR; https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/333080/.REC-20_Health_Effects_RF_Electromagnetic_fields.pdf). PHE responded with, ‘adverse effects of RF field exposure below guideline levels have not been demonstrated’. This was untrue and misleading. I have published a paper in ‘Reviews on Environmental Health’ 31(4):493-503 2016, ‘Inaccurate official assessment of radiofrequency safety by the Advisory Group on Non-ionising Radiation’ which describes inaccurate statements, evidence omitted, conclusions not based on evidence and conflicts of interest (https://www.degruyter.com/downloadpdf/j/reveh.2016.31.issue-4/reveh-2016-0060/reveh-2016-0060.pdf). For example, in the AGNIR report 78% of studies included in the report on male fertility demonstrated harmful effects of radiofrequency signals; nearly all studies on direct effects on proteins or cellular membranes (excluding the blood-brain barrier) included in the report demonstrated effects (97%); 80% of studies included on pre-natal and early neonatal exposures demonstrated decreased neuronal numbers in the developing brain; 79% of studies which could have been included in the report on oxidative stress described significant increases in response to radiofrequency signals; some studies described increased risks of brain tumours in humans associated with wireless phone use; some studies described damage to cognition; around half of the studies included on genotoxicity (damage to genetic material) demonstrated effects, etc. The UK Governments, local authorities, schools, hospitals, members of the public and parents have made decisions based on the AGNIR 2012 report, and the PHE response to it, which affect the continuous, involuntary and long-term exposure of the public to radiofrequency signals.

10. In 2010 the Welsh Government produced leaflets on mobile phones for children, under the guidance of Public Health England/Health Protection Agency. These leaflets have been strongly criticised by scientists working in the field (http://wifiinschools.org.uk/resources/Welsh+mobile+phone+leaflets.pdf). For example, the leaflets stated, ‘When we use a mobile phone it sends out radio signals. A radio or television uses the same types of signals’. This was misleading, as a mobile phone transmits radiofrequency radiation close to the head or body, but radio or television transmitters are usually many miles away and TVs and radios only receive the weak signal, they do not emit radiation. The leaflets also included, ‘…tests done so far do not show there is more risk for us [children] at the moment’. This was incorrect, as many studies have reported that children
absorb more radiation, or radiation more easily, than adults; some studies have described increased risks of brain tumours for individuals who first used a mobile phone under the age of 20; many studies have reported adverse effects of mobile phone-like signals on development. Increased risks were described in the WHO International Agency for Research on Cancer (IARC) Monograph 102 (pages 71 and 74): ‘The exposure of children is higher than that of adults by a factor of approximately two due to the shape of children’s heads, which brings the phone geometrically closer to the brain in children than in adults’, ‘Exposure of regions inside the brain of young children... can be higher by 1.6-3-fold than that in adults. Exposure of the bone marrow in the skull of children can exceed that of adults by a factor of about 10, which is due to the high electric conductivity of this tissue at a young age. Exposure of the eyes of children is higher than that of adults.’

11. The Scottish Government commissioned a report on the impact of digital technology on learning and teaching in 2015. The report can be found at http://www.gov.scot/Resource/0048/00489303.pdf. One conclusion was, ‘Digital technologies appear to be appropriate means to improve basic literacy and numeracy skills, especially in primary settings’. However, there was no mention at any point in the report of any scientific publications, or what evidence the conclusions were based on. The report omitted the scientific literature which describes effects of wireless radiofrequency signals on cognitive inhibition, on development, or on harmful effects such as decreased fertility or increased cancer risks. The report didn’t mention who had written the report or any possible conflicts of interest. There is no way of telling whether a report is accurate or not when no evidence is included. Relevant evidence about safety, damage to cognition or development was omitted.

12. Some information given by PHE has been scientifically inaccurate. For example, PHE wrote to a member of the public in 2015 and included, ‘major developments [of the nervous system] such as myelination process is completed by the age of 2”. This is untrue. The following example papers describe myelination continuing throughout childhood and adolescence: Deoni et al. 2014 https://www.ncbi.nlm.nih.gov/pubmed/25432771, Wu et al. 2014 https://www.ncbi.nlm.nih.gov/pubmed/24038932, Paus et al. 1999 https://www.ncbi.nlm.nih.gov/pubmed/10082463. In addition, the WHO IARC Monograph 102 also states (page 361), ‘The amount of white matter, which corresponds to myelination of nerve axons and is related to the speed of neuronal processing, increases linearly throughout adolescence’.

13. In conclusion, we need mechanisms in place in order for incorrect and misleading information produced by UK Governments (and groups commissioned by them), to be challenged and corrected. Without such mechanisms we are unlikely to achieve scientific integrity for vital information which guides decision makers; tax payers’ money will continue to be wasted on schemes which are based on inaccurate information; human health, development and well-being, as well as our environment, will continue to suffer from initiatives based on incomplete, biased, misleading and incorrect statements.

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