1 On Tuesday 11 January 2005 the National Radiological Protection Board (NRPB), under the Chairmanship of Sir William Stewart FRS, the Chairman of the Health Protection Agency, issued its further Report “Mobile Phones and Health 2004 – Report by the Board of NRPB”. This Report is supplemental to the IEGMP Stewart Report of 11 May 2000.

2 The Report in its Executive Summary states that the following issues have to be taken into consideration:

“1 The widespread use of mobile phone technologies is still fairly recent and technologies are continuing to develop at a pace which is outstripping analyses of any potential impact on health.

“2 There are data which suggests that RF fields can interfere with biological systems.

“3 Because the use of mobile phone technologies is a fairly recent phenomenon, it has not yet been possible to carry out necessary epidemiological studies and evaluate the findings. However, an increase in the risk of acoustic neuromas has recently been reported in people in Sweden with more than 10 years use of mobile phones.

“4 A recent paper has suggested possible effects on brain function resulting from the use of 3G phones, although the Study has some limitations and needs replication. The Stewart Report had previously identified the need for research on brain function.

“5 Populations are not homogeneous and people can vary in their susceptibility to environmental and other challenges. There are well-established examples in the literature of the genetic predisposition of some groups that could influence sensitivity to disease. This remains an outstanding issue in relation to RF exposure and one on which more information is needed ..... There is concern by an increasing number of individuals, although relatively small in relating to the total UK population, that they are adversely affected by exposure to RF fields from mobile phones (see also paragraphs 58-64).

“6 IEGMP (in May 2000) considered that children might be more vulnerable to any effects arising from the use of mobile phones because of their developing nervous system, the greater the
absorption of energy in the tissues of the head and a longer lifetime of exposure. Data on the impact on children have not yet been forthcoming. The potential for undertaking studies to examine any possible effects on children, however are limited for ethical reasons.

“7 There are ongoing concerns in the UK about the user of Terrestrial Trunked Radio (TETRA) by the police and the nature of the signals emitted as well as about exposures to RF from other telecommunications technologies.

“8 There remain particular concerns in the UK about the impact of base stations on health, including well-being. Despite current evidence which shows that exposures of individuals are likely to be only a small fraction of those from phones, they may adversely impact on well-being. The larger numbers of additional base stations which will be necessary to effectively roll out the 3G and other new networks are likely to exacerbate the potential impact. People can also be concerned about effects on property values when base stations are built near their homes.

In paragraph 7 it is stated:

“The Board believes that the main conclusions reached in the Stewart Report in 2000 still apply today, and that a precautionary approach to the use of mobile phone technologies should continue to be adopted”

3 At the Press Conference the main thrust of Sir William Stewart’s concerns related to:

(a) The use of mobile phones by children, and particularly very young children under the age of 8. He urged older children to use their phone sparingly and to text whenever possible.

(b) The use of phones when driving, even if hands free.

(c) The choice of mobile phones with the lowest SAR values, and for proper information on SAR values to be available at sales outlets.

(d) That mobile phone masts should like any other development be subject to normal planning procedures, repeating the recommendation made in the original Stewart Report.

(e) That a proper definition of health should go beyond disease and sickness to include the well-being of communities and individuals.

4. The Executive Summary of the Report which extends to 89 paragraphs highlights a number of issues which remain relevant to Governmental and
Local Government Responsibilities on which the Board of NRPB made recommendations.

**Base Stations (25-31)**

30 The Board notes that whilst the planning process applies to macrocells it does not obviously apply to microcells and picocells. It is important that the networks develop there is a need for clarity in terms of legal responsibilities and regulations in relation to the installation of microcells and picocells and the availability of information about their development.

34 The Board welcomes the provision of information on the SAR from phones by all manufacturers using a standard testing procedure. This is an important contribution to providing information to the public about the potential for exposure and informs consumer choice. It recommends that comparative information on the SAR from phones is readily available to the consumer. The inclusion of comparative data on the SAR from phones in its promotional literature by at least one retailer is a welcome development. The public also need to be able to understand the merits and limitations of published SAR values.

**Planning Guidance on Base Station Location (35-44)**

42 Accepting that, the Board believes that it is timely for there to be set in place a much clearer and more readily understandable template of protocols and procedures to be followed by local authorities and phone operators across the UK. It is clear that at present the application of guidance is very variable and that the extent to which the underpinning facts are presented can also be variable. It recommends that there should be an independent review of the extent to which implementation of good practice guidelines by operators and local authorities is being carried out.

43 The Board considers that it is important that best practice in relation to network development operates consistently across the country and that how planning applications are dealt with should be an open and transparent process.

44 The Board welcomes the ODPM *Code of Best Practice on Mobile Phone Network Development*, that incorporates the ten commitments on best siting practice.

**Developing Technologies (55-57)**

56 The Board considers that it is important to understand the signal characteristics and field strengths arising from new telecommunications systems and related technologies, to assess the RF exposure of people, and to understand the potential biological effects on the human body.

57 The Board also believes it is important that the exposure of people from all new and existing systems complies with ICNIRP guidelines.
**Sensitive Groups (58-64)**

62 Additionally, there is concern by an increasing number of individuals, although relatively small in relation to the total UK population, that they are adversely affected by exposure either to EMF’s in general or specifically to RF fields from mobile phones. A European Commission group of experts termed the syndrome ‘electromagnetic hypersensitivity’. Similar concerns have been raised in the past in relation to exposure to agricultural chemicals and other materials.

63 Members of the public who have written to the Department of Health in England in relation to RF exposure have reported a variety of distressing symptoms including dizziness, fatigue, chronic headache, irregular heart beat, nausea and vertigo, and loss of memory and concentration. These and the other symptoms are reported to result from exposure to a range of EMFs, including RF fields, encountered in everyday life. Similar symptoms were reported to IEGMP at open meetings. Many people also consider that there are serious long-term risks associated with such exposures. In Sweden electromagnetic hypersensitivity has been addressed nationally, accepted as a physical impairment, and a scheme in a place to improve home and working conditions for people who consider themselves to be sufferers.

64 The Board considers that the issue of electromagnetic hypersensitivity needs to be carefully examined in the UK. It supports the strengthening of work designed to understand the reasons for the reported electromagnetic hypersensitivity of some members of the public.

**Health Related Research (84-89)**

87 The Board considers that the MTHR programme, which was first announced in December 2000, has set the standard for independent, high quality, health-related research on RF exposure.

88 The Board further recommends that government and industry should provide support for a continuation of the programme.

89 The Board particularly supports the need for further research, in the following areas:

(a) an international cohort study of mobile phone users aimed at pooling and sharing experimental design, findings and expertise internationally,

(b) an expanded programme of research on TETRA signals and biological effects,

(c) effects of RF exposure on children,

(d) investigation of public concerns about mobile phone technology,
(e) electromagnetic hypersensitivity and its possible impact on health, including well-being, associated with mobile phone technology,

(f) studies of RF effects on direct and established measures of human brain function and investigations of possible mechanisms involved,

(g) complementary dosimetry studies focused on ascertaining the exposure of people to RF fields.

In developing the MTHR and other research programmes, care needs to be taken to prevent unnecessary duplication of studies whilst at the same time seeking to replicate significant findings.

Finally in paragraphs 7 and 19 the Board believes that the main conclusions in the Stewart Report in 2000 still apply today and that a precautionary approach to the use of mobile phone technologies should continue to be adopted.

MTHR Progress Report – 12 September 2007

5.1 Since the publication of Mobile Phones and Health 2004 there have been a number of peer reviewed International Studies and Reports which have suggested the possibility of long term adverse health effects, but mostly from very small samples which may not be of sufficient statistical significance. The main Study was Professor Lennant Hardell’s University Hospital in Orebro Sweden where “the evidence of risks from prolonged cell phone use is quite strong when you look at people who had used these devices for 10 years or longer and when they are used mainly on one side of the head”.

5.2 On 12 September 2007 the Mobile Telecommunications and Health Research programme (MTHR) announced the findings from 23 of 28 studies, being the majority of projects selected in 2003 which showed that there was no evidence that using a mobile phone for less than 10 years was linked to brain cancer. However the research found some signs of extra tumours in the brain or a nerve connecting it to the ear in people who had used mobiles for more than a decade. Professor Lawrie Challis – the MTHR Chairman – however stated: “we cannot rule out the possibility at this stage that cancer could appear in a few years time. Most cancers take 10 years to appear”.

Professor Paul Elliott of Imperial College who had worked on the research stated:-

“The excess is quite small and is at the boundary of statistical significance. There is a hint in the data that needs to be further explored”.

A cohort study involving 200,000 people will now take place in Denmark, Sweden, Finland and Britain in which mobile phone users will be identified and followed for a prolonged period, to ascertain with more certainty whether prolonged exposure and use for more than a decade has any statistically adverse health effects.
Following the publication of the MTHR Report Professor Lennart Hardell in Sweden stated “Recent studies that do not report increased risk of brain tumours and acoustic neuromas have not looked at heavy users use over ten years or longer, and do not look at the part of the brain which would reasonably have exposure to produce a tumour”.

5.3 Professor Lawrie Challis – the Chairman of the MTHR Research Programme - confirmed that the Precautionary Advice given by the Independent Expert Group on Mobile Phones and Health in May 2000 and repeated in paragraph 7 of Mobile Phones & Health 2004 had not changed and in particular parents of children should minimise the use of mobile phones by children whenever possible.

In a BBC Radio 5 Live interview immediately following the presentation of the MTHR Programme Report Professor Challis stated that where there is a choice between using a landline phone and mobile phone it remained sensible not to choose to use a mobile phone and to use the landline phone instead.

5.4 However whether Professor Challis’ advice also relates to children in school classrooms with WiFi internet access is not known. Sir William Stewart, now the Chairman of the Health Protection Agency, has stated that more research into the use of WiFi is urgently required, especially where children at schools are involved.

6.1 In October 2007 a month after the MTHR Press Conference announcing the results of the MTHR research programme which showed that there was no evidence that using a mobile phone for less than 10 years was linked to brain cancer (see paragraph 5.2 above) the peer reviewed journal ‘Occupational Environmental Review’ published in full the results of the Swedish Study into use of mobile phones for ‘more than 10 years’.

6.2 The new study – headed by two world renowned Swedish scientists Professor Lennart Hardell of the University Hospital at Orebro and Professor Kjell Hansson Mild of Umea University who serves on the MTHR research programmes Management Committee – contradicts the official pronouncements that there is no risk or danger of getting brain cancer.

6.3 The Swedish scientists surveyed the results of 11 different studies that have so far investigated the occurrence of tumours in people who have used mobile phones for ‘more than a decade’ drawing on research carried out in Sweden, Denmark, Finland, Japan, Germany, the USA and Great Britain. The Study found that almost all studies had discovered an increased risk, especially on the side of the head where people used their handsets.

The scientists analysed all the studies collectively to find that people who have used their phones for ‘a decade or more’ are 20% more likely to contract acoustic Neuromas and 30% more likely to get malignant gliomas. The scientists conclude “research from present studies on use of mobile phones for “more than 10 years” gives a consistent pattern of an increased risk of
acoustic neuroma and glioma – an increased risk of other types of brain tumours cannot be ruled out”.

6.4 Professor Mild told newspapers correspondents “I find it quite strange to see so many official presentations saying that there is no risk. There are strong indications that something happens after 10 years”. However he stressed whilst brain cancers are rare and account for less than 2% of primary tumours in Great Britain, the real danger may be greater since 10 years is the minimum period for cancers to develop. As they normally take much longer, very many more would be likely to strike long term users after 15, 20 or 30 years.

7.1 To Mast Action UK the Swedish scientists research study seems to reveal rather more than ‘a hint in the data’ that needs to be further explored. Surely the Government’s recommendation should be not to become ‘a heavy user’ of a mobile phone, and to follow Professor Challis’ sensible advice to use a landline phone whenever that choice is available.

7.2 Finally in the meantime the Swedish scientists want a revision of the emission standard for mobiles and other sources of radiation which they describe as “inappropriate” and “not safe”. The international ICNIRP standard is designed merely to prevent harmful thermal heating of living tissue or induced electrical currents in the body – and does not take the risk of getting cancer into account.

The Professors serve on the international BioInitiative working group of leading scientists and public health experts which has produced its Report warning that the International Standard was a thousand of times too lenient.

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