

## **HEALTH AND ADULT SOCIAL CARE OVERVIEW AND SCRUTINY COMMITTEE**

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### **HEALTH IMPLICATIONS OF MOBILE TELECOMMUNICATIONS BASE STATIONS**

Report author

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#### **Summary**

The use of mobile phones is widespread. Radio signals are sent from mobile phones to base stations which transit them to other mobiles or networks. Public concerns exist relating to the potential health risks from the radiation emitted from these base stations. This report seeks to present background information to the topic and to summarise the guidelines on public exposure levels and the current scientific consensus.

#### **1. Budget and Policy Framework**

- 1.1 The Council becomes involved in the siting of mobile telecommunications base stations either as a property owner (where the telecommunications company asks the Council for an agreement to site equipment on its land or through the planning system (where the telecommunications company applies for planning permission or prior approval to site equipment). Property matters are normally a matter for Cabinet. Individual planning applications are a matter for the Development Control Committee and the production of supplementary planning documents is a matter for Cabinet.

#### **2. Background**

- 2.1 At the meeting of this committee on 20 August 2009, Members considered a Member's Item that had been raised in relation to possible health risks related to telecommunications masts.
- 2.2 The committee agreed to hold a special meeting, with Children and Adults Overview and Scrutiny Committee members being invited, to consider the matter of health aspects of telecommunication masts and to invite evidence from expert witnesses.

### **3. Health Exposures from Mobile telecommunications Base Stations**

- 3.1 There are currently over 70 million mobile connections in the UK compared with around 25 million in 2000. The increasingly widespread use of mobile phone technology has been accompanied by public concerns about potential adverse health effects from radiofrequency (RF) emissions.
- 3.2 Mobile phones work by communicating with base stations. To enable calls to be made, the UK is divided into thousands of areas known as 'cells', with a base station at the heart of each. National base station networks are established by mobile phone operators to achieve wide coverage; there are now over 50,000 base station sites in the UK. Macrocells provide the main coverage in a mobile network, and their base stations have a typical power output of tens of watts. Microcells provide additional capacity to areas with high call volume and picocells, normally found inside buildings, provide further localised coverage. The International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines for RF radiation exposure, adopted by the UK government, specifies reference levels for power density from  $2\text{Wm}^{-2}$  to  $10\text{Wm}^{-2}$  for the general public over the RF range 10MHz to 300GHz.
- 3.3 The government set up the Independent Expert Group on Mobile Phones (IEGMP) in 1999 to review possible health impact of mobile phone technology. The main conclusions described in the Stewart report (2000) included:  
'The balance of evidence to date suggests that exposures to RF radiation below NRPB (National Radiological Protection Board) and ICNIRP (International Commission on Non-Ionizing Radiation Protection) guidelines do not cause adverse health effects to the general population. There is scientific evidence which suggests that there may be biological effects occurring at exposures below these guidelines. It is not possible at present to say that exposure to RF radiation is not totally without potential adverse health effects'. The report recommended that a 'precautionary approach to the use of mobile phone technologies be adopted until much more detailed and scientifically robust information becomes available.' The 2007 Bio-initiative report described that, with the exception of one, studies indicate that there is no indication that the RF levels encountered in the vicinity of base stations are genotoxic. However, the report focuses mainly on the health risks of mobile phones themselves.
- 3.4 A 2003 National Radiological Protection Board report focused on a review of studies conducted since the Stewart report and concluded that the 'exposure levels (to RF radiation) from living near to mobile phone base stations are extremely low, and the overall evidence indicates that they are unlikely to pose a risk to health.' The report also acknowledged that published research on RF exposures and health has limitations and that, as mobile phone use is a relatively recent phenomenon, there remained a possibility that RF exposure below guideline levels could lead to adverse health effects and that more research into the area would be required.

- 3.5 Third generation (3G) technology, which became operational in the UK in 2003, describes the advanced generation of mobile technology which offers services such as internet access and video conferencing. 3G enabled devices also operate by communicating with base stations via radio signals. 3G network cell sizes are smaller than 2G ones and so more base stations needed to offer the same network coverage. The ICNIRP guidelines apply to both 2G and 3G technology.
- 3.6 The Health Protection Agency Radiation Protection Division has made repeated measurements of RF levels at publicly accessible locations around macrocell base stations. Results in the NRPB Report R321 described that average exposure were found to be 0.002% of the ICNIRP public exposure guidelines. The Office of Communications (Ofcom) has performed over 600 audits since 2000 to check that RF emissions from base stations comply with exposure guidelines. Their audit of sites around schools in 2009 showed that the highest measurements at each site are a very small fraction of ICNIRP guidelines. In 2007, the Mobile Telecommunications Health Research (MTHR) Programme Management Committee published a report which also noted that RF exposures from base stations are well under international guidelines. When 3G antennas are installed on existing base stations, the resultant emission levels are increased slightly but are still only a fraction of recommended guidelines.

#### **4. Conclusion**

- 4.1 The scientific consensus is that exposure levels to RF radiation from mobile phone base stations are extremely low and are unlikely to pose a risk to health.

#### **5. Expert witnesses invited**

- 5.1 To enable the committee to explore the issue in more depth, the following expert witnesses and representatives have been invited to attend the meeting:
- Health Protection Agency – Dr Mike Clark
  - Mobile Operators Association – Nicola Davies
  - Radiation Research Trust – Michael Bell
  - Local resident and campaigner – Mike Evans
- 5.2 After receiving presentations from each of these and asking questions, the committee will need to decide what, if any, further action it wishes to take.

## 6. Risk Management

Risk	Description	Action to avoid or mitigate risk
Low	The council needs to consider planning applications for mobile phone masts in accordance with the law and government advice.	Legal advice on the likely success of any legal challenges.

## 7. Financial and legal implications

- 7.1 In accordance with s38(6) of the Planning & Compulsory Purchase Act 2004 the Council is obliged to determine planning applications in accordance with the development plan, unless material considerations indicate otherwise. Government guidance is a material planning consideration which must be taken in to account in making such determinations.
- 7.2 Government guidance on telecommunications is contained in PPG8. Paragraph 30 of PPG 8 states: *“However, it is the Government’s firm view that the planning system is not the place for determining health safeguards. It remains central Government’s responsibility to decide what measures are necessary to protect public health. In the Government’s view if a proposed mobile phone base station meets the ICNIRP guidelines for public exposure it should not be necessary for a local planning authority, in processing an application for planning permission or prior approval, to consider further the health aspects and concerns about them”*. Paragraph 31 states *“local planning authorities should not implement their own precautionary policies e.g. by way of imposing a ban or moratorium on new telecommunications development or insisting on minimum distances between new telecommunications development and existing development”*.
- 7.3 Any attempt by the Council to refuse planning permission or prior approval on health grounds would be highly susceptible to appeal and the Council could potentially have costs awarded against it if it chose to pursue such a reason for refusal.
- 7.4 Earlier this year, the European Parliament adopted a report which suggests that masts, etc should be set a certain distance away from schools. The Parliament called for the European Commission to commission further research and issue clearer guidance on the health effects of telecommunications equipment. The adoption of the report by the European Parliament does not make it a binding EU law and the UK government’s guidance on determining planning applications or prior approvals in relation to telecommunications equipment remains as set out in PPG8.

## 8. Recommendations

- 8.1 The committee will need to decide what, if any, further action it wishes to take.

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### Background Papers

1. Stewart, Sir W. 2000. Mobile Phones and Health. Report by the UK Independent Expert Group on Mobile Phones. pp. 1 – 160.
2. Health Protection Agency. Mobile Telephony and Health Exposure from Base Stations. Available via: [http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb\\_C/1195733767890?p=1158934607786](http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1195733767890?p=1158934607786), accessed 20/10/09.
3. BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF), available via: <http://www.bioinitiative.org/report/docs/report.pdf>
4. Ofcom. Mobile phone base station audit – results 2009. Available via: <http://www.ofcom.org.uk/sitefinder/audits/audit09/>, accessed 20/10/09.
5. Mobile Operators Association. Available via: [http://www.mobilemastinfo.com/information/fact\\_sheets/intro.htm](http://www.mobilemastinfo.com/information/fact_sheets/intro.htm), accessed 20/10/09
6. Mobile Telecommunications Health Research Programme Management Committee Report 2007. Available via: [http://www.mthr.org.uk/documents/MTHR\\_report\\_2007.pdf](http://www.mthr.org.uk/documents/MTHR_report_2007.pdf) accessed 20/10/09