SUMMARY

The Medical Devices Agency has published detailed information and the results of tests on the effects of mobile communications equipment on medical devices. This notice is a synopsis.

BACKGROUND

1. The Medical Devices Agency (MDA) has published a Device Bulletin DB9702: Electromagnetic Compatibility of Medical Devices with Mobile Communications, containing detailed information and results of tests on 178 different models of electromedical device using a wide range of radio handsets. This will be distributed in Scotland by Scottish Healthcare Supplies as soon as copies are available.

2. In general, it was difficult to define a safe distance away from an electromedical device at which handset operation could be allowed. Safe distance rules have been found to be hard to implement in practice (due to walls, floors and other radio transparent barriers) and are often ineffective since it is virtually impossible to control personnel in areas just outside wards and treatment rooms.

3. In order to assist in the estimation of risk, a statistical model was used to predict the distance at which a given handset will result in a 5% probability of interference. The Device Bulletin includes full details of the model and a graphical representation reproduced as an Appendix to this notice.


ACTION

5. This notice should be brought to the attention of all appropriate managers, staff and users of electromedical devices.

6. Trusts should formulate local policies based on the electromedical devices and communications equipment in use and the local environment, taking into account the following recommendations:

   Emergency Services radio handsets
   (Ambulance/Police/Fire)

7. These handsets are the most likely to cause problems because of their higher power transmitters and lower operating frequencies. The following proposals have been agreed with the emergency services:

<table>
<thead>
<tr>
<th>Suggested Distribution</th>
<th>Accident &amp; Emergency</th>
<th>Ambulance Services</th>
<th>Community Care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device Managers</td>
<td>District Nursing</td>
<td>Estates/Facilities</td>
<td>General Managers</td>
</tr>
<tr>
<td>Medical Physics</td>
<td>Nursing</td>
<td>Portering Services</td>
<td>Resuscitation Teams</td>
</tr>
<tr>
<td>Risk Management</td>
<td>Safety Officers</td>
<td>All areas where electromedical devices are likely to be used</td>
<td></td>
</tr>
</tbody>
</table>
MOBILE COMMUNICATIONS: INTERFERENCE WITH MEDICAL DEVICES

- personnel carrying these handsets should be made aware of the risks,
- personnel carrying these handsets should always make themselves known to hospital staff in charge of the area they are entering,
- these handsets should only be used in a hospital in an emergency, never for routine communications,
- personnel should move well away from treatment areas before initiating or answering a call,
- staff operating base stations should not try to contact an officer on routine matters on hospital premises.

Security radio handsets (security/porters/maintenance staff)
6. These are the only radio handsets routinely used by hospital employees which have a high risk of causing EMI problems. Risks could be minimised by the use of alternatives such as pagers, cordless telephones or cellphones. Otherwise, consideration should be given to restricting the use of these radio handsets.

Cellphones (Analogue and Digital mobiles)
7. These devices have some potential to interfere with electromedical devices, especially at short range. At distances greater than 2m the risk is substantially reduced. However, cellphones should always be switched off in the following locations:
- operating theatres and treatment areas where sensitive devices may be in use,
- by a bedside when a patient is connected to any electromedical device,
- other designated areas where there is a perceived risk.

8. Cellphones should not be left in standby mode in restricted areas as the handset continues to communicate periodically with the base station.

9. It is important that:
- users, patients and visitors are informed of restrictions,
- restricted areas are clearly signed,
- staff are made aware of the possibility of interference from mobile phones affecting electromedical devices.

Cordless phones and computer radio LAN systems
10. These systems are very unlikely to cause EMI under most circumstances and need not be restricted.
APPENDIX

Risk assessment for various radio handsets

In order to assist in the estimation of risk a statistical model has been used to predict the distance at which a given handset will result in a 5% probability of interference.

The top line in the following graph is for all devices averaged over the whole dataset for cordless (c), mobile cellphones (m) and emergency/security radios (e).