



Mobile Communications in and around Hospitals

The use and placement of mobile communications equipment in and around hospitals has been widely discussed resulting in very different policies and approaches in different countries.

There are two issues involved, namely whether:

1. the use of mobile phones within hospitals should be the subject to any restriction due to possible interference issues; and
2. mobile phone base stations should be allowed to be built on hospital buildings because of concerns about possible impacts upon the health of patients.

The use of mobile phones within hospitals

The published literature has reported that under test conditions (most often sustained full power transmission in immediate proximity) certain medical devices may be susceptible to interference from mobile phones or other radio frequency emitting devices¹. However, such conditions are rare in normal practice, and can be nearly eliminated by following internationally accepted standard guidance for the deployment, use, and management of mobile phones in hospitals^{2,3}. Bodies such as the UK's Medicines and Healthcare products Regulatory Agency (MHRA) support the adoption of sensible guidelines and policies that allow mobile phone use to be managed within the hospital to mitigate the risk of interference as an alternative to bans. The MHRA recognizes that mobile phones can play an important role in communications between staff and medical professionals that can speed the delivery of the best possible care to a patient and for this reason their use should not be overly restricted.⁴ Similar recommendations have been made by US FDA⁵ and Health Canada⁶. In January 2009, UK National Health Service

¹ http://www.mja.com.au/public/issues/181_03_020804/law10022_fm.html

² ISO technical report #21730

³ AAMI Technical Information Report #18

⁴ http://www.mhra.gov.uk/home/idcplg?IdcService=SS_GET_PAGE&useSecondary=true&ssDocName=CON002052&ssTargetNodeId=389

⁵ <http://www.fda.gov/cdrh/emc/emc-in-hcf.html>



encouraged hospitals to allow a more liberal use of mobile phones and MHRA welcomed the use of mobiles in non critical areas.⁷

The mobiles industry supports the adoption of such policies and includes advice to users in user manuals that mobile phones should be switched off wherever they are requested to do so in hospitals, clinics or other health care facilities in order to prevent possible interference with sensitive medical equipment.

The deployment of base stations on hospital buildings

While some people have been concerned about base stations being deployed on hospital buildings, it is useful to note two important points. The first is that the maximum radio-frequency (RF) intensity in publicly accessible areas around a base station always occurs at some distance away from the antennas, and not immediately below them. The second is that measurements undertaken have shown that RF exposure in publicly accessible areas is normally thousands of times below the international safety standards. If a base station is located in the best position (from an RF engineering point of view) both base station and handset will operate at the minimum levels. Conversely, if base stations are forced to be located in less than optimal positions, this can result in higher RF signals from both the base station and the handset as they try to compensate, despite the fact that even these higher levels are still safe. This last point was also noted in a recent report released by the Irish government.⁸

A recent fact sheet issued by the WHO concluded: *Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations cause adverse health effects.*⁹

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⁶ Tan K. S., Hinberg I., Wadhvani J. Electromagnetic Interference In Medical Devices: Health Canada's Past And Current Perspectives And Activities. IEEE Trans. EMC, , Pg. - , 2001

⁷ <http://nds.coi.gov.uk/content/detail.asp?NewsAreaID=2&ReleaseID=388916>

⁸ <http://www.dcmnr.gov.ie/NR/rdonlyres/9E29937F-1A27-4A16-A8C3-F403A623300C/0/ElectromagneticReport.pdf>

⁹ <http://www.who.int/mediacentre/factsheets/fs304/en/index.html>