MOBILE COMMUNICATION DEVICES

Background

In light of developments in medical equipment design, the widespread introduction of mobile communication devices into SA hospitals and the proposal to extend the SA-GRN (SA Government Radio Network) into hospitals, the use of mobile communication devices in patient related areas has been reviewed.

It has long been established that radio frequency (RF) transmitting devices, such as mobile phones and walkie-talkies, can interfere with medical devices. Tests undertaken by BEAG members indicate that these RF transmitting devices do interfere with medical devices and that severe consequences are possible. A review of reported medical equipment incidents supports this conclusion.

Also taken into account are the guidelines of bodies such as the Therapeutic Goods Administration (TGA) and the ECRI - Plymouth Meeting, PA, USA.

Recommendations

To prevent portable communication devices such as mobile phones, walkie-talkies and radio network handsets interfering with sensitive medical equipment the following guidelines should be observed:

1. Mobile Phones

   All mobile phones should be turned ‘OFF’ prior to entering a designated patient related areas except as follows:

   Clinical staff may be allowed limited use of mobile phones within patient related areas provided they agree to the following:

   a) They will maintain a distance of at least 1 metre from medical devices when carrying a mobile phone that is turned ‘ON’.

   b) They will be attentive to unexpected medical device performance and immediately report any such incidents to their biomedical engineering service provider for investigation.

2. Walkie-talkies (handheld transceivers)

   Walkie-talkies shall not be used in the ‘TALK’ mode (transmission activated) within 6 metres in any direction of designated patient related areas, or within 6 metres in any direction of a medical device. (The risk of interference is greater for walkie-talkies than mobile phones). Walkie-talkies may remain in the ‘ON’ position within these areas, however they should be kept in the ‘LISTEN’ mode only.

3. SA-GRN Handsets

   Government Radio Network (GRN) handsets are to be switched ‘OFF’ when within 6 metres in any direction of designated patient related areas or within 6 metres in any direction of any medical device.

   If, while on retrievals or outside a designated patient related area and within 6 meters in any direction of an medical device, it is deemed by the clinical staff present - given due regard to the associated risk - that it is necessary to maintain communications via the GRN handsets, they should:

   a) Maintain the maximum distance possible between the handset and any medical device.

   b) Be attentive to unexpected medical device performance and immediately report any such incidents to their biomedical engineering service provider for investigation.

4. Base Stations

   Prior to the installation of any base station or fixed radio frequency (RF) transmitting device installation, the biomedical engineering service provider shall be consulted in order to consider the impact of the proposed installation on patient safety.
5. **Cordless telephones**

There is no reported evidence to suggest low power cordless telephones interfere with medical devices, therefore there is no reason to restrict their use within a clinical environment. However, it is recommended that the biomedical engineering service provider be consulted prior to installing these devices and that clinical staff be advised to be attentive to unexpected medical device performance and immediately report any such incidents to their biomedical engineering service provider for investigation.

6. **Digital Enhanced Cordless telecommunication DECT Devices**

There is no reported evidence to suggest DECT devices interfere with medical devices, therefore there is no reason to restrict their use within a clinical environment. However, it is recommended that the biomedical engineering service provider be consulted prior to installing these devices and that clinical staff be advised to be attentive to unexpected medical device performance and immediately report any such incidents to their biomedical engineering service provider for investigation.

7. **Wireless Local Area Networks (LANs)**

There is no reported evidence to suggest wireless local area networks interfere with medical devices, therefore there is no reason to restrict their use within a clinical environment. However, it is recommended that the biomedical engineering service provider be consulted prior to installing these devices and that clinical staff be advised to be attentive to unexpected medical device performance and immediately report any such incidents to their biomedical engineering service provider for investigation.
Bibliography


Mitchell T. RF interference into electronic medical equipment at Flinders Medical Centre. Telecom Australia 1993.