| **Title:** | *Cell Phones, Walkie-Talkies, and Wireless System Use* | | | | |
|---|---|---|---|---|---|
| Author: | *Sonja Judge* 01/23/97<br>Sonja Judge, BCE Dept Date<br>Biomedical & Clinical Engineering | Author: | NA Date | Distribution: | Hospital- Wide |
| Endorsed: | *Dennis Stanek* 04/24/08<br>Dennis Stanek Date<br>Chair,<br>Hospital Safety Committee | Endorsed: | *Marcus Montgomery* 04/24/08<br>Marcus Montgomery, RN, JD Date<br>Assistant Vice President<br>Chief Patient Safety Officer | Pages 1 of<br>Written<br>Reviewed<br>Revised<br>Issued | 4<br>01/23/97<br>06/20/07<br>04/24/08<br>05/05/08 |
| Approved: | *Michael Waldrum* 05/08/08<br>Michael R. Waldrum, M.D., MS Date<br>CEO, UAB Hospital | Approved: | *Cynthia Brumfield* 05/12/08<br>Cynthia Brumfield, MD Date<br>Chief of Staff | | |
| JC Ref#: | EC. 6.10 (2006) | | | Discontinued: | |
| **Associated Diagnosis/-Cross-References (CR):** | **Purchasing Guidelines – Equipment, Supplies, Labor, Contract, Materials (CR)*<br>**HIPAA* | | **Confidentiality of Information (CR)*<br>**Consent to Photograph, Videotape, Audiotape or Film (CR)*<br>**Professional Code of Conduct (CR)* | | |

1. **PURPOSE:** To establish guidelines to protect patients in the Hospital against risks of patient care equipment malfunction due to the interference between wireless systems, cellular telephones, and walkie-talkies. It is not the intent of this policy to inhibit use of these devices but to manage the risk of these devices in high-risk areas.

2. **PHILOSOPHY:** It is our belief that UAB University Hospital shall provide a safe environment in patient care areas by managing the risk of wireless systems, cellular telephones, and walkie-talkies.

3. **ASSOCIATED INFORMATION:**

3.1. **Definitions:**

3.1.1. ***Electromagnetic Disturbance (EMD)*** is an electromagnetic phenomenon, which may degrade the performance of equipment and/ or systems.

3.1.2. ***Electromagnetic Interference (EMI)*** is degradation of the performance of a piece of equipment, transmission channel, or system (Ex: medical devices) caused by EMD.

3.1.3. ***Radiofrequency (RF)*** is an electromagnetic wave frequency intermediate between audio and infrared frequencies used especially in radio and TV transmission.

3.1.4. ***Electromagnetic Compatibility (EMC)*** is the ability of equipment and/or intolerable electromagnetic disturbances to anything in the environment.

3.1.5. ***Radio Transmission Devices*** are devices used to transmit RF signals.

3.1.6. ***Transceivers*** is a radio transmitter – receiver used for transmission and reception of data.

3.1.7. ***Biomedical & Clinical Engineering Department*** is abbreviated as BCED.

3.1.8. ***Patient Care Equipment*** is medical equipment used for resuscitation, life support, treatment, monitoring, and diagnosis of patients.

3.1.9. ***Critical Care Areas*** are areas where patients are in critical condition and are highly dependent on monitoring or life-support equipment or areas where highly specialized medical equipment is utilized. Ex: ICUs, CCU, Emergency Department, Operating Rooms, Diagnostic Imaging Rooms, and Clinical Laboratories.

3.1.10. ***Center for Devices and Radiological Health*** is abbreviated as CDRH.

3.1.11. ***Technical Advisory Team (TAT)*** is a function of the Communication Electrical Closets Oversight Team that shares information regarding existing, new, and/or proposed technology, provides technology evaluation and guidance, and determines appropriate internal and/or external support.

3.2. **Background Information:** Hospitals are complex electromagnetic environments. [6.5] Numerous sources of RF fields exist in and near a hospital. EMI can affect analog inputs, digital data bus or digital control bus in medical equipment/ systems. Extraneous electromagnetic energy can appear to medical equipment as physiologic signals or change the appearance of physiologic signals. CDRH states [5.4] examples of problems that may occur due to EMI. This publication states "the consequence of EMI with medical devices may be only a transient blip on a monitor, or it could be as serious as preventing an alarm from sounding an inappropriate device movement leading to patient injury or death." Presently, there are no mandatory standards for immunity for medical equipment. In the USA, 2.300 – 2.483 GHz band is available for unlicensed operation. Use of Wireless Systems in the healthcare environment is increasing everyday. Hence, it is important to address use of wireless systems.

4. **STANDARDS:**

4.1. **Cellular Telephones, Wireless PDA, and 2-way Pagers**:

4.1.1. The use of cellular telephones, wireless PDA, and 2-way pagers in critical care areas by patients, staff, physicians, vendors, contractors, manufacturers and visitors shall be prohibited with the exception of emergency situations concerning hospital security or patient safety.

4.1.2. Areas where cellular telephones are necessary for normal operation (Ex: Critical Care Transport shall be informed of the potential problems and shall be trained on the recognition of problems.

4.1.3. All patients shall be verbally notified upon admission by the admitting clerk and by written notice within the patient information handbook that the use of cellular telephones, wireless PDA, 2-way pagers, and other radio transmitters in critical care areas is prohibited.

4.1.4. Cellular telephones, wireless PDA, and 2-way pagers shall be turned off completely, not left in "Standby" mode while in posted areas.

4.1.5. Notices shall be posted at the entrances and in critical care areas advising visitors of potential dangers, the existence of this policy, and of safe places for use.

4.1.6. As a courtesy to our patients, cell phones shall not be used by hospital staff and physicians for personal reasons while performing patient care activities.

4.1.6.1. At no time shall a camera phone be in use in patient care areas.

4.1.6.1.1. Taking a photograph of patients or staff is prohibited.

4.1.6.1.2. Failure to comply is a breach in confidentiality and may result in termination.

4.2. **Walkie-Talkies**:

4.2.1. Use of walkie-talkies in critical care areas shall only be allowed in cases in which safety of patients, staff, or the police officer is at risk and the need for an immediate emergency response is required. In such cases, the officer shall use his/ her judgement as to the risks involved as stated in the policy.

4.3. **All Other Wireless Systems**: The following standards are based on results published by ANSI in C63.18-1997 [5.3]. Since there are no mandatory standards that manufacturers must comply with presently for immunity, any field strength value could cause EMI.

4.3.1. Use of transceivers will be prohibited within less than three (3) feet of any patient care equipment in critical care areas. It is highly recommended to increase the distance between transceiver and any patient care equipment, as it reduces the risks of EMI, thereby creating a safer patient care environment.

4.3.2. Any wireless systems brought into the hospital for use by patient, staff, vendors, contractors, manufacturers or visitors must be reviewed by the TAT and approved for use by the Hospital Safety Committee prior to use in the hospital.

4.3.3. The following departments are part of the TAT and shall be called in regards to: BCED for medical equipment, HSIS for computers and computer related equipment, Communications for telephones and communications related

equipment, and Radio Paging for walkie-talkies, radio devices and radio frequency licensing.

4.3.4. The higher the power of a RF transceiver, the more likely interference is to occur. Hence, if the transceiver has optional or adjustable power levels, minimum power level setting will be used for reliable communication.

4.4. **Purchase of Cellular Telephones/ Walkie-Talkies/ Wireless Systems for the Hospital**:

4.4.1. EMI standards used for referencing current acceptable allowances include but are not limited to: AAMI, FDA, ECRI, IEC, NFPA, JCAHO, FCC, ANSI, and Medical Device Manufacturers.

4.4.2. It is the responsibility of TAT and Procurement to require manufacturers to provide EMI/ EMC specifications when ordering new equipment/ systems.

4.4.3. Departments requesting the use of any of the above types of devices on a permanent or temporary basis should contact BCED before purchasing the device. An evaluation will be performed by TAT prior to purchasing.

4.4.4. The request should be submitted in writing from the requesting department to the BCED director.

4.4.5. It is the responsibility of the requesting department to furnish BCED with all items/ components of the device/ system in question to be tested.

4.4.6. TAT will test each system and present its findings with recommendations to the requesting department and the Hospital Safety Committee.

4.4.7. Any device considered for purchase must follow the “Purchasing Guidelines – Equipment, Supplies, Labor, Contracts, Materials” policy located on the SCR website.

4.4.8. Any device/ system that is rejected by the TAT and Safety Committee must leave the premises at the earliest time possible. It is the responsibility of the requesting department to notify the BCED director in writing of the device’s removal.

4.5. Staff shall be held responsible for enforcing this policy in critical care areas.

4.6. Where necessary UAB Police will provide backup assistance for enforcing this policy.

5. **REFERENCES:**

IEC 60601-1-2, Medical Electrical Equipment, Part 1: General requirements for safety, 2. Collateral Standard: Electromagnetic compatibility – Requirements and Tests, 1993-04, 1st edition.

FDA MDS-201-0004, Electromagnetic Compatibility Standard for Medical Devices. Oct 1, 1979.

ANSI C63.18-1997, American National Standard Recommended Practice for an On-Site Ad Hoc Test Method for Estimating Radiated Electromagnetic Immunity of Medical Devices to Specific Radio-Frequency Transmitters. IEEE, December 31, 1997.

Medical Devices and EMI: the FDA Perspective. Don Witters. Center for Devices and Radiological Health. Web site address: http://www.fda.gov/cdrh/persp.html.

Cellular Phones and Interference to Medical Equipment – K.R. Forster, University of Pennnsylvania, 10/6/94.

Electromagnetic Interference: Causes and Concerns in the HealthCare Environment. American Society for Hospital Engineering of the American Hospital Association, Healthcare Facilities Management Series, August 1994.

Should Cellular Phones be Banned in Hospitals? Biomedical Safety and Standards Review. April 1, 1994.

CMBE and SBET Recommend Cellular Phone Ban and RFI Standards Review. Biomedical Safety and Standards. May 1, 1994.

Guidance Article: Cellular Telephones and Radio Transmitters – Interference with Clinical Equipment. ECRI. Health Devices. Aug – Sept 1993.

Electromagnetic Interference and Medical Devices. An Update on the Use of Cellular Telephones and Radio Transmitters in Healthcare Facilities. Health Devices. Feb – Mar 1996, vol. 25, Nos. 2-3.

Use of High EMI Equipment. Adam Broussard. Web site address: http://www.flash.net/~addman/bmet/emipoly.html.

Use of Radio Frequency Emitting Devices in the Hospital. Policy No. 2.2.1. Rev. Date Dec 1998. Egleston Children's Hospital at Emory University and Scottish Rite Children's Medical Center (ESR Children's Health Care System, Inc.). Safety Policy and Procedures Manual. Received as e-mail attachment from Steve Kelley, Clinical Engineering Manager, ESR Children's Healthcare System on 1/28/99.

Cell Phones and Walkie-Talkies: Is It Time To Relax Your Restrictive Polices? Health Devices. October 1999, Vol 28, Number 10.

6. **SCOPE:** This standard applies to all patient, staff, physicians, vendors, contractors, manufacturers, and visitors hospital-wide that are involved with the use of devices mentioned in this policy.

7. **ATTACHMENTS:** None

## INTERDISCIPLINARY COLLABORATION

| | |
|---|---|
| *None* | |
| Physician / Medical Committees | Endorsement Date |
| *None* | |
| Committees / Councils | Endorsement Date |
| *None* | |
| Departments | Endorsement Date |

### Tracking Record

| Action | | | | Reasons for Development/Change of Standard | | | | | | | Change in Practice | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Devel-oped | Refor-matted | Re-viewed | Revised | Re-quired Review | Rele-vance | Ethics | Legal | New Knowl-edge | QA/I | Risk | No | Yes | Comment/ Explanation of Impact |
| | | X | X | X | | | X | | X | X | | X | *Prohibits use of cell phone camera in patient care areas.* |
| Supersedes: | Cellular Telephone Use, 03/26/97; Cell Phones, Walkie-Talkies, and Wireless System Uses , 03/07/00, 08/05/02, 08/01/05, 09/04/06 | | | | | | | | | | | | |
| File Name: | Cell Phones, Walkie-Talkies, and Wireless System Uses, I# 228r5 | | | | | | | | | | | | |
| REVISIONS: Consistent with Joint Commission Standards, this standard is to be reviewed at least every 3 years and/or as practice changes. | | | | | | | | | | | | | |