New Wireless Medical Telemetry Service

Background
Currently, most wireless medical telemetry devices operate as secondary users in select commercial broadcast TV bands - 174-216 MHz (channels 7 to 13) and 470-668 MHz (channels 14 to 46), and in the private land mobile radio service (PLMRS) 450-470 MHz band. As secondary users, medical telemetry must accept interference from, and not interfere with, primary licensed users. In addition, some medical telemetry
equipment operates on a shared basis in the industrial, scientific, medical (ISM) and other bands. The spectrum used by wireless medical telemetry equipment on an unlicensed or secondary basis is increasingly being used by existing primary services, thereby posing an increased risk of interference to medical telemetry devices.

**Allocation of Spectrum**
To protect patients using medical telemetry equipment from electromagnetic interference (EMI), the Federal Communications Commission (FCC) recently dedicated a portion of the radio spectrum for wireless medical telemetry devices such as wireless heart, blood pressure and respiratory monitors. The FCC's June 8 Report and Order allocates 14 MHz of spectrum to the Wireless Medical Telemetry Service (WMTS). The frequency bands are allocated as follows:

- Medical telemetry equipment will share, on a co-primary basis with radio astronomy, the 608-614 MHz (TV channel 37) band.
- Medical telemetry devices will have primary status on the 1395-1400 MHz and the 1429-1432 MHz bands, pending the gradual phase out of certain government radar sites. A listing of these government radar sites and their locations is included in the appendices of the FCC Report and Order, which was published in the July 17 Federal Register, page 43995.

**Frequency Coordinators**
The FCC will designate one or more frequency coordinators, whose task will be to maintain a database of WMTS transmitters and to notify users of potential frequency conflicts. The AHA has petitioned to serve as a frequency coordinator for the WMTS.

**Definition and Technical Requirements**
The FCC's Report and Order adopts the AHA's definition of wireless medical telemetry as the measurement and recording of physiological parameters and other patient-related information via radiated bi- or unidirectional electromagnetic signals. The Report and Order includes minimal technical standards so as to maximize the different applications for medical telemetry equipment. However, to prevent users from monopolizing the 608-614 MHz band, the FCC requires that wireless medical telemetry equipment be capable of operating on channels of 1.5 MHz each, up to a maximum of 6 MHz. The Report and Order also includes the field strengths permitted for transmitters in the WMTS.

**Transition Periods**
The Report and Order states that the FCC will not approve medical telemetry equipment that operates in the DTV or PLMRS bands effective two years from the adoption of the final rules. The FCC's goal is to encourage the medical telemetry community to move out of harm's way and into the dedicated spectrum allocations.

At the AHA's request, the FCC will permit medical telemetry equipment that has received an equipment authorization to operate in the DTV or PLMRS bands prior to the two-year transition date, to continue to operate without a cutoff date. This action will ensure that hospitals are not faced with any unnecessary financial burdens by permitting them to operate their existing systems as long as feasible until replacement is necessary due to age or interference concerns. However, it is important to recognize that the TV broadcasters will continue testing and transmitting in their allocated spectrum.

Within three years from the effective date of the final rules, the FCC will lift the freeze on issuing licenses in the PLMRS band. Because FCC data has shown that the medical telemetry community uses the lower PLMRS band (450-460 MHz) very little, the freeze on that band will be lifted on January 29, 2001. The upper band freeze (460-470 MHz) will be lifted sometime toward the end of the designated three-year transition period.

**ISM Bands**
While the FCC will permit medical telemetry equipment to continue to operate in the ISM bands, hospitals must recognize that equipment operating in these bands has no protection from interference from ISM equipment or other low power transmitters operating under FCC rules.
Federal Register Notice
The FCC’s Report and Order establishing the Wireless Medical Telemetry Service, ET Docket No. 99-255, is published in the July 17 Federal Register beginning on page 43995. Parties wishing to comment have 30 days. The WMTS becomes effective October 16, 2000, which is 90 days after the Federal Register publication

The FCC press release and order are available at http://www.aha.org/aha/members_only/member/advisories/ar/Advocacy/wmtemetry600.asp. Please do not hesitate to contact the AHA’s Mary Beth Savary Taylor at (202) 626-2270, if you have questions about this matter.