High-Definition Television and Telemetry

In March 1998, WFAA-TV in Dallas became the first television station in the United States to venture into the future of digital broadcasting. But as the broadcast signal went into the airwaves, medical telemetry units on the 13th floor at nearby Webb Roberts Hospital at Baylor University Medical Center went blank.

It was 24 hours before engineers at the television station and Baylor put 2 and 2 together to figure out that the heart monitors were on the same frequency as the station’s new signal. There was a good chance that theirs was not the only conflict. As a result, the US Food and Drug Administration (FDA) sent out an advisory warning hospitals and healthcare providers of the potential conflict. The situation, the agency warned, could occur in other parts of the country because of a quirk in the way television channels are assigned.

Several years ago, the Federal Communications Commission (FCC) decided to allow medical telemetry devices to use part of the broadcast spectrum that was also used by television stations. The medical telemetry units were assigned a television channel that was not being used in a particular area. However, the agency warned that television stations had priority and medical devices had to be able to tolerate television signal interference. Putting the 2 different kinds of users on separate channels originally alleviated the problem.

But the advent of digital broadcasting forced the FCC to give stations an additional channel during the transition to the newer form of broadcasting. The FCC was apparently unaware that some of the channels it assigned were already being used for medical telemetry.

Fortunately, the Dallas case resulted in no harm to patients, said Baylor spokeswoman Jamie Rambo. The hospital was already planning to replace its heart telemetry units with updated multifrequency versions, Rambo said. WFAA turned off its test broadcast signal, the hospital expedited installation and training on the new monitors, and the problem seemed to be solved.

However, several weeks later, the Dallas station began testing its signal again, and once more, a Baylor hospital—a different one this time—had problems, Rambo said. Again, the hospital went through the equipment updating procedures while the television station waited.

Since that time, the FDA has required television stations to warn hospitals and nursing homes about the possible conflict in signals. Now the agency is working with medical equipment manufacturers on labeling that warns of the problem.

To prevent a similar mishap, the FDA advises that hospitals and healthcare institutions determine the channels/frequencies that their telemetry systems use and consult with the FCC for the digital television channels that will be coming on line in their area. If there is a conflict, the healthcare institutions should find out when the television stations plan to begin their test digital broadcast and change telemetry channels before that time.

The FCC and FDA are cooperating to determine the needs of such medical devices in the future in hopes of avoiding a similar blackout of information.

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