

A study published in the Journal of the American Medical Association shows that RFID systems need to be used with caution in the presence of medical equipment.

By Mark Roberti

June 30, 2008—Bad news about radio frequency identification sure does travel fast. Seems every newspaper, Web site and blogger on the planet picked up the news that RFID systems could interfere with medical equipment, according to a new study by the *Journal of the American Medical Association* (JAMA). And as expected, many articles got it wrong.

Headlines such as "[Ubiquitous Electronic Chips Can Interfere With Pacemakers & Ventilators](#)" (*Discover Magazine*), "[Wireless chips may endanger patients in hospital](#)" (Foodconsumer.org), "[Wireless Radio Chips May Pose Health Risk](#)" (*Ontario Now*) and my personal favorite, "[RFID could kill you](#)" (*The Register*), show that the authors don't understand RFID, or that they didn't even bother to read the JAMA article. The tags weren't the problem—it was the readers.



The study, conducted by Remko van der Togt, Erik Jan van Lieshout and four of their colleagues at the [University of Amsterdam's Academic Medical Center](#) (AMC), revealed that RFID interrogators sometimes emit sufficient electromagnetic energy to affect medical equipment (see [Researchers Warn RFID May Disrupt Medical Equipment](#)). That is, readers operating at full power from a distance of less than 20 feet could disrupt the operation of fusion pumps, ventilators and other equipment.

During the 123 tests conducted, there were 34 instances where the RFID system tested had an impact on medical equipment. Twenty-six involved passive systems, while eight were caused by active systems (passive systems often emit more energy because the reader needs to power up the tag). Twenty-two incidents involved equipment that could impact a patient's health.

The study is extremely valuable because it is one of the first to document the potential impact of RFID systems on hospital equipment. Clearly, patient safety is of the utmost importance, and no hospital should deploy an RFID system without first understanding the effect any new RF technologies (including Wi-Fi) could have on the care a hospital delivers to a patient.

Here are a couple of things to be aware of: The tests involved operating equipment at full power, and the hazardous incidents occurred at a median range of 10 inches. Few hospitals deploy passive RFID systems in areas where there are patients—most track the movement of items at chokepoints. But clearly, hospitals need to be conscious of the power output of readers, and they need to test systems in areas where there are patients, regardless of power levels. And RFID vendors need to conduct their own tests and provide guidance to hospitals.

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I feel confident in saying that RFID systems, if used properly and with due caution, are safe. But we shouldn't take anything for granted when lives are at stake. Test and deploy RFID technology only in ways that will not adversely impact patients.

Mark Roberti is the founder and editor of RFID Journal. If you would like to comment on this article, click on the link below. To read more of Mark's opinions, visit the [RFID Journal Blog](#) or click [here](#).

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