

THE USE OF RADIO FREQUENCY IDENTIFICATION (RFID) IN TRACKING SURGICAL SPONGES AND REDUCING WRONG-SITE SURGERIES

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ABSTRACT

There has been some promising research in the use of RFID technology to ensure that medical sponges are not mistakenly left in surgical patients—estimated to occur once in every 10,000 open cavity surgeries. However, the issues of human error and retained sponges were raised during trials.

I propose to research the possibility of having a continuously scanning RFID system. This system would eliminate the human interaction of the current handheld scanning devices. With the human interaction no longer a factor in the process, scanning the cavity too early to detect all of the sponges used or scanning at a distance too great for the tags to be read will no longer be of any concern.

RFID tags also have the possibility to assist in decreasing the number of wrong-site surgery occurrences—estimated at one in every 112,994 operations. Each patient would have an RFID tag with a unique identification number corresponding to a database with his or her procedure information. The tag will be scanned when the patient enters the operating room and the corresponding information will then be displayed.

The proof-of-concept research performed shows promising findings that it is possible to have a continuously scanning RFID system for the detection of surgical sponges. The paper also describes the development of a software program that utilizes RFID tags to increase the availability of information in the operating room to decrease the chances of wrong-site surgeries. Further development will need to be performed before either proposal can have a clinical trial.