

**Table 1****Benefits of Implementation and Utilization of Radio-Frequency Identification (RFID) Systems in Transfusion Medicine**

<b>Source</b>	<b>Benefits</b>
College of American Pathologists (2005)	<ul style="list-style-type: none"><li>• RFID allows for accurate identification of blood products and recipients.</li><li>• RFID tags eliminate transfusion error due to patient misidentification.</li></ul>
Porcella and Walker (2005)	<ul style="list-style-type: none"><li>• Pretest and posttest of RFID in transfusion medicine, first in a pilot of five units in an Iowa hospital system and then in a systemwide implementation</li><li>• In pilot, the rate of detection of misidentified patients or blood products increased between 3 and 10 percent, and in the systemwide implementation, the rate increased 30 percent.</li></ul>
Chang et al. (2008)	<ul style="list-style-type: none"><li>• Pretest and posttest of RFID implementation in a blood center</li><li>• Detection of misidentified blood products improved 19 percent.</li></ul>
Davis et al. (2009)	<ul style="list-style-type: none"><li>• Literature review of comprehensive assessment with a cost-benefit model</li><li>• Found a 2 percent return on investment over a five-year planning horizon with an approximate four-year payback period.</li></ul>
Kumar (2009)	<ul style="list-style-type: none"><li>• Pilot study of RFID implementation and utilization</li><li>• Found an inventory savings of \$150,000 through the pilot program</li></ul>
Revere et al. (2010)	<ul style="list-style-type: none"><li>• Overview of hospitals that have instituted RFID within the organization</li><li>• Wayne Memorial Hospital in North Carolina reported a savings of more than \$300,000 due to RFID initiatives.</li></ul>
Lou et al. (2011)	<ul style="list-style-type: none"><li>• Passive RFID tags decrease fatal blood transfusions by linking all specimens and procedures during hospitalization.</li><li>• Higher data storage than barcodes</li><li>• Temperature sensing potential is important in component storage.</li></ul>
Pustkova et al. (2011)	<ul style="list-style-type: none"><li>• Examination of the implementation of RFID to assist with visual examination and identification of blood specimens in a single hospital setting</li><li>• Increased job performance in transfusion medicine</li></ul>

	processes
Poshywak (2012)	<ul style="list-style-type: none"> <li>• Examination of implementation and realization in facilities that have already implemented new technology</li> <li>• Return on investment, in a five-year projection, showed annual impact of more than \$10 million.</li> </ul>
Transfusion Medicine RFID Consortium (2012)	<ul style="list-style-type: none"> <li>• Pilot study of RFID implementation and utilization in a blood donation center and hospital setting</li> <li>• RFID reduced donation site misidentification and lost products by 33 percent, reduced final destination loss of product by 87 percent, increased efficiency by 63 percent, and had zero delivery errors.</li> </ul>
Hohberger et al. (2013)	<ul style="list-style-type: none"> <li>• Pretest and posttest of RFID implementation in a large 700-bed academic hospital emergency room and blood and marrow transplant units</li> <li>• Found the system payback period to be 2–5 years, and found an increase in employee performance of 10 percent with the implementation and utilization of RFID</li> </ul>
Kotzen (2013)	<ul style="list-style-type: none"> <li>• Review of Virtua Health System’s implementation of RFID, saving an estimated \$1.2 million through error prevention and employee job performance</li> </ul>

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