Purpose: To develop an automated notification and reporting system that uses a series of database queries to monitor and audit the Radiation Oncology workflow, and provide feedback to users via e-mail notification to reduce human errors and improve consistency in the department workflow.

Methods: A set of SQL queries was developed to monitor elements of the workflow that correspond directly with data recorded in the database. These queries were automated using a combination of third-party querying and formatting tools including iSQL and Infomaker (Sybase, Inc), Acrobat Professional (Adobe), and Windows XP batch programming and task scheduling. The output of these queries was stored in the form of PDF or plain text results files. An interpreter was written in Visual Basic 2010 (Microsoft) to read in a text files created by a SQL database query, sort out appropriate recipients, and send out reminders via e-mail based on e-mail addresses stored in Aria.

Results: The automated system was first used to replace manual notification of physicians of upcoming simulation appointments with missing documentation. In a survey of recipients, the feedback was positive, indicating acceptance of the system in the clinic. A retrospective audit of the workflow showed no change in the rate of on-time completion of documentation, indicating successful replacement of the manual process.

Conclusions: The software package for the automated notification/reporting system has been implemented successfully, and its feedback was very positive. Application to additional parts of the workflow is in development.