

Purpose: We present an electronic logbook, an efficient tool for tracking physicists' work on treatment equipment in the clinic.

Web accessible electronic logbooks have replaced their paper equivalents in many physics laboratories, particularly in high-energy physics, as a more reliable means of tracking progress on projects involving a large number of people.

In the radiation oncology environment there are several machines that need constant monitoring and frequent maintenance, and several physicists and engineers ensuring these tasks are successfully accomplished. Although paper records of such events are traditionally kept, these have several disadvantages: they are at risk of being misplaced, are only accessible in one place, can be cumbersome to search through, and all too often contain illegible handwriting.

Methods: An electronic log, "elog", (written by Stefan Ritt and released under the GNU Public license), was configured for the radiation oncology environment with the aim of improving physicists' workflow and as a result, increasing patient safety. Entries are made on a webpage, submitted to a database, and assigned a URL that is linked from the logbook homepage. Entries may include formatted or plain text, tables, images, and attachments. Examples of use include machine maintenance records, discussion of machine-specific issues, and routine quality assurance results.

Results: This free software is very user-friendly; a prototype electronic log was successfully configured for the UCSF clinic in a matter of days, and a demonstration of its use was made. The elog is currently being implemented for use in the CyberKnife suite and to track issues with treatment planning computers.

Conclusions: The elog has the potential to improve workflow, encourage accountability, increase accessibility of information, and promote discussion of treatment machine specific issues. This may result in a safer and more effective patient experience.