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Time spent using computers and impact on clinical work among doctors

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Introduction

The NHS is under pressure due to rising hospital admissions, a decreasing number of available hospital beds and an ageing population. Efficiency improvements are therefore required. It is anecdotally reported that waiting for hospital computers to action inputs reduces time for direct patient care.

Aims

- To assess the opinion of doctors as to how hospital computer systems impact on their clinical work.
- To describe the amount of time spent waiting for computers to action common inputs.
- To record the amount of time that junior doctors spent using computers.

Methods

A mixed-method study at one UK teaching hospital.

A questionnaire was circulated via email to canvass doctors' opinions on the efficiency of hospital computer systems.

Process analysis of hospital computers in clinical locations, recording the time taken to complete: logging in, loading a patient's blood results, imaging results and electronic notes.

Structured observation of junior doctors in blocks of 1 hour using a bespoke tablet PC application that records the activity being undertaken by a junior doctor every 30 seconds.

Results

Of the 77 questionnaire respondents, 26 were junior doctors and 51 were consultants. 57 (74%) deemed their clinical work to be delayed by computers every day. The most commonly reported issues related to logging in and lack of availability of computers. Those doctors who worked out-of-hours (OOH) shifts felt that their clinical work was delayed by computer systems by an average of 30 minutes per day, which was significantly higher than those who did not work OOH (10 minutes, p=0.006, Mann-Whitney U test).

Of 71 computers sampled, 72% were able to complete all actions requested. Median overall time taken to complete all aspects was 169 seconds (range 121–787 seconds), with initial login taking on average 47 seconds.

In 23.4 hours of structured observation of junior doctors during OOH shifts, 'Using a PC' occupied 9.1 hours (39%) of observed time. The median length of use was one 30-second bin of time (median two). Visits to the ward office were longer if a PC was used (median 6 minutes, interquartile range (IQR) 10) than if it was not (median 0.5 minutes, IQR 2.2).

Conclusions

The use of hospital computers is a common perceived and actual impediment to clinical work. Further work is required to replicate these findings on a larger scale at other sites. ■

Conflict of interest statement

The authors have no conflict of interest to declare.

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