What is already known on this topic

Providing computer terminals on wards to access laboratory results is usually regarded as a service improvement for healthcare staff

Many laboratories that transmit results to ward terminals dispense with telephoning emergency blood results

What this study adds

Many urgently requested results are not looked at if hospital staff need to access a computer terminal to obtain them

If ward terminals are used as a complete substitute for the telephone, results that would have led to an immediate change in patient management may pass unnoticed

consequences for the clinician responsible and hospital trust if it transpired that harm to a patient could have been prevented if their emergency results (whether perceived urgent at the time or not) had been viewed in a timely manner. In our audit, up to 3% of the accident and emergency results that were never looked at could have led to an immediate change in patient management. This equates to more than one patient per week.

It is difficult to determine how transferable our findings are to other hospitals. Although a recent benchmarking exercise involving 104 UK biochemistry laboratories reported that most are capable of transmitting results to ward terminals,[3] the actual number doing so is not known precisely. However, 30 other UK laboratories use the same laboratory computer system as the one in this audit.[4] Some other laboratory and hospital computers prompt users (when they log on) to view all the results for their ward that have not yet been accessed. This should reduce the likelihood of tests never being looked at, but it might have less impact on reducing the delays in accessing results after they become available.

To our knowledge, only one other study has assessed the delay in viewing emergency laboratory test results with a ward terminal.[5] In that study, in a US hospital, the time to access urgent inpatient haematology blood counts was shorter than we found (64% within one hour), and this finding was used to justify the need for local hospital laboratories rather than off site analysis. Curiously, however, no mention was made of the proportion of results that were never seen at all on screen by clinicians.

Solution to the problem

The problems we identified were solved in Hull by introducing "trickle" printers to the high intensity areas included in our audit that would print out an interim report on any patient in the ward or department as soon as the results became available. This introduced several benefits. Firstly, clinicians had immediate access to a patient's results even if they did not know that blood had been taken or, indeed, that the patient was present on their ward. Secondly, the printed record

reduced the risk of errors occurring in transcribing results from the terminal screen into the case notes. Staff in the accident and emergency department also agreed to forward results by telephone should the relevant patient have left the department by the time the results were printed. In other wards with computer access the telephoning of results was reintroduced if the results lay outside critical limits.

Conclusions

The electronic communication of emergency laboratory results should not be assumed to be inherently superior to traditional communication methods, since hospital staff cannot be relied on to look at many urgently requested results if they have to access a computer to do so. Hospitals that have implemented, or are about to implement, a similar strategy to the one we audited need to satisfy themselves that the system is of as much benefit to clinicians and patient care as it is to laboratory staff.

1 Manor PG. Turnaround times in the laboratory: a review of the literature. *Clin Lab Sci* 1999;12:85-9.
2 Powsner SM, Wyatt JC, Wright P. Opportunities for and challenges of computerisation. *Lancet* 1998;352:1617-22.
3 *Pathology benchmarking feedback report (clinical biochemistry) 1999.* London: Clinical Benchmarking Company, 1999.
4 Berkeley Computer Services (www.berkeleycs.co.uk).
5 Winkelman JW, Tanasijevic MJ, Wybenga DR, Otten J. How fast is fast enough for clinical laboratory turnaround? Measurement of the interval between result entry and inquiries for reports. *Am J Clin Pathol* 1997;108:400-5.

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Correction

Randomised trial of personalised computer based information for patients with schizophrenia

An editorial error occurred in this article by Ray B Jones and others (7 April, pp 835-40). In the diagram of patient flow through the study (p 836) the number of patients in the computer only group who were lost to follow up after session 2 because of refusal should have been two (not 20). In addition, some superfluous arrows crept into the figure, wrongly linking the boxes of patients lost to follow up in the computer only group and in the community psychiatric nurse only group.

Endpiece
Training anaesthetists

Marshal Joffre, commander of the French armies in the first world war, noted that, "It takes 10 000 to 15 000 lives to train a major general." It doesn't take as many as that to train an anaesthetist, but it does take a certain number. After all, the anaesthetist takes them one at a time.

W Stanley Sykes,
in *Essays on the first hundred years of anaesthesia*,
Edinburgh: Churchill Livingstone,1960

Submitted by Colm Lanigan,
consultant anaesthetist, London