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Two of the authors of the Technical Brief cited above respond:

To the Editor:

M. Fahie-Wilson makes several interesting points to which we would like to respond. First, we agree that a recovery of >65% does not indicate the absence of macroprolactin, but that macroprolactin is not the predominant form in circulation. Regarding the imprecision of the polyethylene glycol (PEG) precipitation technique, it is worth considering that the highest values were observed in the sample with a recovery in the intermediate range (47%) and in the sample with very low recovery (5%) (1). The slight differences in the PEG precipitation processes, especially those relating to temperature and centrifugation, can help to explain the differences observed when comparing our results with those of Fahie-Wilson and Soule (2). Another important point is the definition of “substantial quantities of macroprolactin”; we arbitrarily defined that >50% of the circulating prolactin in the form of macroprolactin should be considered as a substantial quantity; however, this definition obviously depends on the total prolactin present in the sample. Samples with high prolactin values and substantial quantities of macroprolactin could still have monomeric prolactin in sufficient quantities to induce clinical symptoms. As a last point, we would like to stress that the chromatographic system adopted by Fahie-Wilson and Soule (2) has a better resolution than the one that we used. Our choice of a simpler and more rapid system stems from practical necessity.

Finally, we would like to add that the Fahie-Wilson and Soule publication (2) was not available during the preparation of our Technical Brief, which was very unfortunate, because access to their data would have allowed us to produce a more comprehensive publication. Nonetheless, calling attention to the macroprolactin phenomenon and providing a practical way of dealing with it are the objectives that, in our understanding, were fulfilled by the publications.

References


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Point-of-Care Testing Outcomes in an Emergency Department

To the Editor:

In response to your Editorial (1) on outcomes assessment for point-of-care testing (POCT), we would like to convey our comments on our own experience with POCT in our hospital emergency department (ED). We introduced a NOVA 14 whole blood electrolyte analyzer (on loan from VA Howe and Co., Ltd) into our ED for a trial period. Result turnaround times (from blood sampling to result availability) and total patient waiting times in the ED were measured in three settings: (a) use of POCT in the ED; (b) use of a porter system to carry samples to the central laboratory, with results returned electronically; and (c) use of a pneumatic tube rapid transport system instead of a porter system. The procedures followed were approved by our ethics committee. The turnaround time for results using POCT (median, 5 min; 25th to 75th centile range, 4–6 min; n = 130) compared with a porter system (median, 58 min; range, 47–77 min; n = 191) or a pneumatic tube rapid transport system (median, 49 min; range, 37–65 min; n = 192) was significantly faster (P <0.05, Wilcoxon sign-rank test), as expected.

The shorter turnaround time for laboratory test results did not reduce total patient waiting time (median, 219 min; range, 171–277 min with POCT; median, 212 min; range, 170–275 min with the porter system; and median, 258 min; range, 189–364 min with the rapid transport system).

Other factors, such as reduced bed availability on the wards at the time the pneumatic tube transport was used and delays associated with other investigations (such as radiology, enzymes, drug assays, and blood cell counts, with a median turnaround time of 80 min) had a greater impact on patient disposition.

Preanalysis delays were related to the organization of doctors’ time in the ED (median, 120 min). A critical path analysis illustrating the median times for 1 night of the study is shown in Fig. 1.

It was our impression that with training, the ED staff could routinely obtain analytically acceptable results with POCT but that the laboratory
was required to help with problems such as erroneous calibration. The manufacturer claimed that the direct costs of POCT (50 pence/sample for 50 samples/day or 35 pence/sample for 100 samples/day) were similar to the costs of central laboratory testing (38 pence/sample); however, there was no transferable saving because of the central laboratory funding structure, and there was a substantial additional capital cost. We concluded that POCT in our ED was not an efficient use of resources.

Our findings support those of Parvin et al. (2), who considered it unlikely that routine POCT in a large ED would by itself affect patients' length of stay. Similarly, Kendall et al. (3) found no effect of POCT on clinical outcomes or the time patients spent in the department because additional care for most patients was limited by the availability of inpatient beds. They did find that POCT reduced the time taken to make patient management decisions that were dependent on the results of blood tests. We agree that more evidence is needed on therapeutic outcomes to justify the use of POCT with limited funding.

References