Must We Review Printed Lab Reports Without Checking Them? A Prospective Analysis of Emergency Department Practice

Abstract:
A McCabe, P Staunton, S Walsh, R O’Sullivan
Department of Paediatric Emergency Medicine, Our Lady’s Children’s Hospital, Crumlin, Dublin 12

This study investigated if results of haematology and biochemistry laboratory tests, carried out at the point of care in our Emergency Department, are checked by the clinician who ordered the test, mitigating the requirement to check printed reports later. Laboratory standards mandate the review of a printed report for purposes of accreditation. Laboratory tests are used as an adjunct in assessing patients presenting to the Emergency Department (ED). Laboratory tests, carried out at the point of care in our Emergency Department, are checked by the clinician who ordered the test, demonstrating responsibility for the content of the report. We contend that the results of haematology and biochemistry laboratory tests carried out in the ED should be checked by the ordering clinician, at the point of care, thus mitigating the requirement for NCHDs to recheck written reports later. Furthermore, there is a common practice of adding tests on by specialist teams, to samples already sent for haematology and biochemistry testing. These tests typically have prolonged turn-around times (>24 hours). We introduced a trial change in practice whereby printed haematology and biochemistry reports were no longer reviewed by ED NCHDs.

Methods
Prospective analysis of haematology and biochemistry printed reports in a tertiary paediatric ED over a two-week period. Test criteria (Table 1) for clinically significant abnormal results were set. Tests with prolonged turn-around times greater than 24 hours were highlighted. A chart review was conducted to examine all clinically significant abnormal test results and tests with prolonged turn-around times. Patients with a clinically significant abnormal result who had no follow-up organised were contacted. Finally, a telephone survey of existing Irish ED practice in this area was undertaken during the study period.

Results
A total of 519 laboratory results were examined. Thirty percent (30%, n=158) of these met the inclusion criteria for significantly abnormal laboratory results and their case notes were examined retrospectively. Ninety-six patients (61%) with significantly abnormal laboratory results were admitted and 62 patients (39%) were discharged. Of the 158 total significantly abnormal results, 57.6% (n=91) were documented, 34.8% (n=55) were not documented in the ED clinical case notes, while 12 (7.6%) of the ED cards were missing.

When considering the 55 results that were not documented in the ED clinical notes, 44 results pertained to patients who were admitted to the hospital during the same episode. Of the remaining 11 results, 5 related to children with pending outpatient appointments while 6 pertained to patients who were discharged from the ED. Of the 6 children who were discharged with abnormal laboratory results without follow-up, one result related to a CRP of 16 g/dL, with a child with tonsillitis; another was a CRP of 19 g/dL, in a child with asthma; one result was a white cell count of 20 x 10^9/L in a child with a respiratory tract infection and two results pertained to minimally raised urea (6.5 mmol/L and 7.7 mmol/L) in children with gastroenteritis.

Of note, one patient who had a significant abnormal result, and which was documented in the ED clinical notes, was discharged without follow-up. This was an incidental finding of a low Hb (81 g/L) in a child with asthma; one result was a CRP of 16 g/dL in a child with tonsillitis; another was a CRP of 19 g/dL, in a child with asthma; one result was a white cell count of 20 x 10^9/L in a child with a respiratory tract infection and two results pertained to minimally raised urea (6.5 mmol/L and 7.7 mmol/L) in children with gastroenteritis.

Of note, one patient who had a significant abnormal result, and which was documented in the ED clinical notes, was discharged without follow-up. This was an incidental finding of a low Hb (81 g/L) in a child with asthma; one result was a CRP of 16 g/dL in a child with tonsillitis; another was a CRP of 19 g/dL, in a child with asthma; one result was a white cell count of 20 x 10^9/L in a child with a respiratory tract infection and two results pertained to minimally raised urea (6.5 mmol/L and 7.7 mmol/L) in children with gastroenteritis.

Of note, one patient who had a significant abnormal result, and which was documented in the ED clinical notes, was discharged without follow-up. This was an incidental finding of a low Hb (81 g/L) in a child with asthma; one result was a CRP of 16 g/dL in a child with tonsillitis; another was a CRP of 19 g/dL, in a child with asthma; one result was a white cell count of 20 x 10^9/L in a child with a respiratory tract infection and two results pertained to minimally raised urea (6.5 mmol/L and 7.7 mmol/L) in children with gastroenteritis.

Of note, one patient who had a significant abnormal result, and which was documented in the ED clinical notes, was discharged without follow-up. This was an incidental finding of a low Hb (81 g/L) in a child with asthma; one result was a CRP of 16 g/dL in a child with tonsillitis; another was a CRP of 19 g/dL, in a child with asthma; one result was a white cell count of 20 x 10^9/L in a child with a respiratory tract infection and two results pertained to minimally raised urea (6.5 mmol/L and 7.7 mmol/L) in children with gastroenteritis.

Our study suggests that not checking printed haematology and biochemistry reports does not result in significant abnormal results being missed in the ED for patients who are discharged. The documentation in the ED clinical notes was unsatisfactory. Locally, senior doctors should review junior doctors notes to ensure that documentation is complete. Interestingly, a literature review found no relevant published studies. Tests with prolonged turn-around times generally have no impact on immediate ED management. While the ED staff does not usually order them, the legal responsibility to follow-up abnormal results may rest with the ED. In-patient teams who are adding on these tests should ensure that the results are forwarded onto them and not to the ED.

Acknowledgements
Dr John Cronin and Siobhan Mc Coy for reviewing the final manuscript.
References
1. Standards for the Medical Laboratory Clinical Pathology Accreditation (UK), 2009

Comments: