

Are laboratory tests always needed? Frequency and causes of laboratory overuse in a hospital setting

Janne Cadamuro ¹, Martin Gaksch ², Helmut Wiedemann ², Giuseppe Lippi ³,
Alexander von Meyer ⁴, Astrid Pertersmann ⁵, Simon Auer ², Cornelia Mrazek ², Ulrike Kipman ⁶,
Thomas K Felder ², Hannes Oberkofler ², Elisabeth Haschke-Becher ²

Affiliations [+](#) expand

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Abstract

Background: Inappropriate utilization of laboratory resources is an increasing concern especially in high-throughput facilities. Until now, no reliable information has been published addressing to which extent laboratory results are actually used for clinical decision-making. Therefore, we aimed to close this gap using a novel retrospective approach including a survey of clinicians and nurses.

Methods: We retrospectively evaluated the number of re-orders for potassium (K), lactate dehydrogenase (LD), aspartate-aminotransferase (AST), activated partial thromboplastin-time (APTT) and prothrombin-time/INR (PT/INR), after the initial order had to be cancelled due to preanalytical non-conformities. We analyzed subgroups regarding time to re-order, ward and sample priority (urgent vs. routine). Subsequently, we surveyed clinicians and nurses, asking for their estimate of the amount of failed re-orders as well as for possible reasons.

Results: From initially cancelled tests, only ~20% of K, LD, AST and ~30% of APTT and PT/INR tests were re-ordered within 24 h. 70% of the investigated clinical chemistry and 60% of coagulation tests were re-ordered one week after cancellation or not at all. Survey participants quite accurately estimated these numbers. Routine laboratory panels, short stay of out-patients, obsolete test results and avoiding additional phlebotomies were the main reasons for not re-ordering cancelled tests.

Conclusions: Overall, 60-70% of test results in the investigated assays ordered in a high throughput laboratory are potentially inappropriate or of doubtful clinical importance. Although clinicians and nurses are aware of this situation, it is the duty of laboratory specialists to overcome overutilization in close collaboration with all involved healthcare workers.