

Proficiency testing: impact on safety and quality of blood bank services and networks

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Quality is constantly sought in services and products of transfusion medicine with the goal of increasing blood safety. Quality programs are usually established by national regulations, which include proficiency tests that aim to obtain objective data to evaluate professional performance.⁽¹⁾ External quality assessment programs are an important tool among these proficiency tests; they allow the evaluation of the performance of either serological or molecular biology methods used in the routine of laboratories.⁽¹⁻³⁾

In 2001, the Brazilian *Agência Nacional de Vigilância Sanitária* (ANVISA) implemented the National External Quality Assessment Program - Immunohematology (NEQAP-IH) for public Blood Banks⁽⁴⁾ that is now coordinated by the Brazilian Health Ministry and is stated in blood banking regulations of Brazil.⁽⁵⁾ This program is cost-free for participants, and has an educational purpose and should by no means be punitive. Eight Blood centers produce the testing samples to ensure adequate sample distribution to the participating immunohematology laboratories throughout Brazil, a country of continental proportions. The number of participating laboratories has increased since the beginning of the program.

It is important to note that the type of professionals involved in laboratory activities is quite diverse in Brazil, varying between different regions of the country. National regulations permit specifically trained technicians in addition to university level professionals, to perform transfusion related activities in blood service laboratories. The different level of training of these professionals is believed to have an impact on proficiency tests.

Brener et al.⁽⁶⁾ reported on the evaluation of the performance of different professional categories, including university graduates and technicians, in the public network of immunohematology laboratories of Minas Gerais State in the southeastern region of Brazil. The authors demonstrated the impact of different levels of training of the personnel involved in these laboratories. According to the study, there was a percentual of overall error of approximately 4.5% in blood typing (ABO/RhD), similar to previously published data from Brazil,⁽⁴⁾ Thailand,⁽⁷⁾ and UK and Canada.⁽⁸⁾ The percentual of error in irregular antibody screening found was around 27%, similar to that previously described in Brazil, but higher than that described in Thailand (around 1%)⁽⁷⁾ and in UK and Canada (ranging from 0 to 47% depending on antibody specificity).⁽⁸⁾ A rate of 11% of errors was described in the study concerning compatibility testing. When data from different professional categories were analyzed, there was a higher percentual of error (74.6%) among technicians from courses other than clinical pathology and with only high school education, compared to clinical pathology technicians (44.1%, p-value < 0.001). Among university level personnel, no differences were observed. When training programs were analyzed, a non-significant improvement of error levels was observed for all categories.

It would be very important for studies similar to those carried out in Minas Gerais to be extended to other regions of the country, enabling an evaluation of the regional status of professional performance. This knowledge regarding regional status would enable the mapping and planning of strategies to optimize performance taking regional characteristics into account. The cited study also suggested the importance of regular training programs for professionals, independently of category or level, to permit improvement in the quality of blood transfusion in Brazil.

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