UK NEQAS
International Quality Expertise

50 Years as World Leaders in EQA 1969–2019

PRINTED BY SCIENCEPOSTERS .co.uk

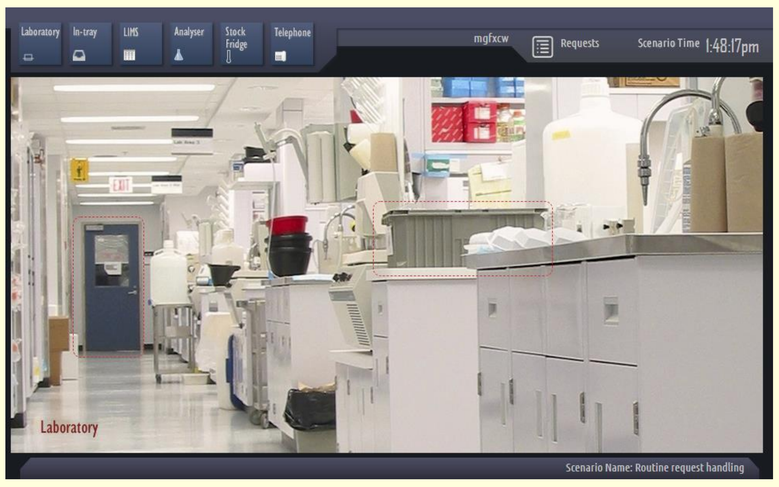
Training Assessment and Competency Tool (TACT) – A gap analysis of the TACT programme vs. overseas pre-transfusion testing guidelines and practices – adapting TACT for international application

Whitham C, White J, Haggas R - UK NEQAS for Blood Transfusion Laboratory Practice (BTLP), Watford, UK.

Background and Aims

The UK NEQAS (BTLP) Training, Assessment and Competency Tool (TACT) was introduced in the UK in 2014 with the aim of supporting Transfusion Laboratory Managers, by providing a resource-saving, continual, 'real-time' system to monitor the knowledge-based competency of staff in transfusion laboratories. TACT is available online 24/7, and complements existing practical competency systems and external quality assessment. The system automatically generates 'exercises' containing multiple variations on a standard pre-transfusion testing scenario, using constrained randomisation. TACT is programmed with logic rules for the rapid, automatic assessment of commonly encountered tasks in a routine transfusion laboratory, such as sample acceptance and rejection, ABO and D grouping, antibody screening and identification, and component issue. The logic rules are based on published British Society of Haematology (BSH) guidance. A feature within TACT allows managers to amend the outcome of a participation, in the rare event the scoring logic is outwith local policy or guidelines. During 2018, TACT was offered internationally to transfusion laboratory managers to trial, and the system saw uptake in five countries outside of the United Kingdom. The core TACT programme, based upon UK guidelines, is currently under review for programming conversion, to be fully customisable for the international community.

Figure 1. The TACT virtual laboratory

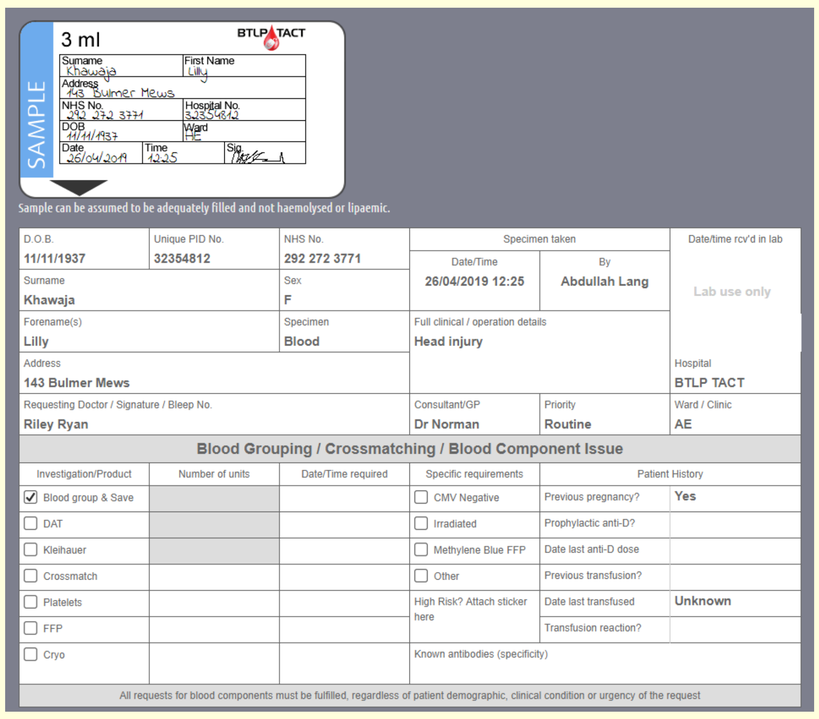


The aims of this study were to assess the feasibility of current TACT programming conversion to adequately meet the requirements of country-specific pre-transfusion testing guidelines and practices, and to direct future TACT programming developments in line with feedback from trial international users.

Methods

Pre-transfusion testing guidelines (or nearest equivalent) were sought from five international trial users; guidelines were obtained from three of these and translated into English where necessary. The content of the guidelines was compared against the core assessment elements of current TACT programming. Additionally, international users were approached for their feedback on the current version of TACT following accessing the programme, as it compared to their local policies and practices.

Figure 2. Example of a sample label and request form



The following criteria were cross-referenced:

- specification of transfusion request forms
- patient transfusion sample label acceptance criteria
- recommended and/or mandated specification of reagents used for ABO and D grouping
- antibody screening and identification
- recommendations for the resolution of ABO and D grouping anomalies
- alloantibody confirmation/exclusion
- selection criteria of blood components for transfusion-dependent patients and women of child-bearing potential.

Figure 3. The TACT stock fridge

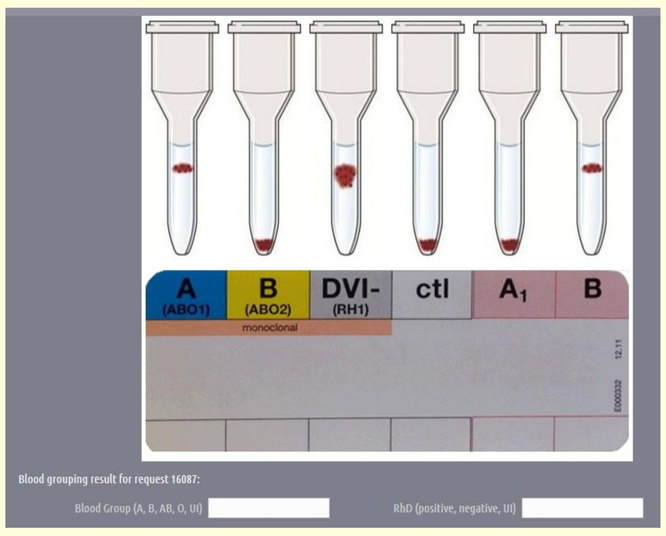
Results

Guideline differences.

Apparent differences between UK guidelines and those obtained from the three responding countries included:-

- Selection of red cells for patients with immune anti-D
  UK specifies the issue of red cells that are D-C-E-
- Inclusion of the name of the patient's father on the transfusion request form (Greece).
  This is not a requirement in the UK.
- ABO group testing of all new patients (i.e. with no previous transfusion history) with an anti-A,B reagent and two different monoclonal anti-D reagents (Italy).
  This is not a requirement in the UK

Figure 4. Example of an ABO/D grouping cassette in TACT, and space for interpretation



Feedback.

International trial users in the same three countries supplied feedback of their experiences using TACT. Their comments included:-

- Introduction of a greater level of complexity of cases presented
- Provision of patient clinical, transfusion and obstetric history
- Inclusion of further follow-on 'confirmatory' tests, for example phenotyping and panel red cells for antibody confirmation/exclusion,
- A broader range of reaction strength grading
- Official professional CPD credits.

The following differences were noted by the respondents:-

- Nomenclature and terminology used
- Format and content of the request form
- Use of English abbreviations for patient clinical details that did not translate into local language
- Availability, provision and specification of blood components.

Conclusions

This data analysis has shown very few instances where the current TACT logic differs from the international guidelines reviewed, and where there are differences, these do not appear to represent a clinical risk related to misinterpretation of results. A feature within TACT allows managers to amend the outcome of a participation, in the rare event the scoring logic is outwith local policy or guidelines. The feedback provided is similar to that also received from participants within the UK. It is feasible to expand the use of TACT on a more international basis, especially into English-speaking countries. The current iteration of TACT has been developed thus far to represent an abbreviated scope of pre-transfusion testing practices, which has been shown to be applicable to laboratory practice outside of the UK. Further work is required to enable some configuration of TACT by users so that it can fully represent laboratory practice on an international basis.

References

BSH Guidelines for pre-transfusion compatibility testing in blood transfusion laboratories. Transfusion Medicine volume 23, issue 1, pages 3-35 February 2013, and at http://www.b-s-h.org.uk/guidelines/
Standard of Transfusion Medicine 3rd Edition. Italian Society of Transfusion Medicine and Immunohaematology, October 2017
Guiding rules for control of compatibility of blood between donor and recipient (translated). Greek Democracy, Ministry of Health and Social Security, National Blood Service (E.KE.A) ,September 2009, Athens
Guidelines for Transfusion and Immunohaematology Laboratory Practice 1st Edition. Australian and New Zealand Society of Blood Transfusion Ltd. November 2016

Presented at ISBT 2019 ref. P-021

UK NEQAS (BTLP) is hosted by the West Hertfordshire Hospitals NHS Trust