Introduction

UK NEQAS (H) at Watford General Hospital is a designated World Health Organisation (WHO) Collaborating Centre for Quality Assurance in Haematology. A key part of the role of the centre is operating the International External Quality Assessment Scheme for Haematology (IEQAS (H)). IEQAS (H) participants include government funded district and rural laboratories in resource limited countries. In 2013, there were 64 participants and 2 reference laboratories (total 66), in 58 WHO member states. Participants are encouraged to act as local ‘reference’ laboratories.

Survey Material

Survey material developments have mirrored changes in technology. At the inception of the IEQAS (H) service over 20 years ago, most of the participant laboratories used basic laboratory equipment and techniques.

To simulate blood count specimens, cell free haemolysates were developed, to which fixed human platelets and fixed avian red blood cells (to simulate white blood cells) were added. This survey material is stable without refrigeration and suitable for the measurement of haemoglobin (Hb) concentration, white blood count and platelet count.

In recent years, there has been a change in the use of instrumentation by participants, moving away from counting chambers and colorimeters to fully automated haematology analysers. IEQAS (H) is undertaking trials of fully stabilised, whole blood survey material as a replacement for the haemolysate specimens.

Supra-vital stained blood films are provided for reticulocyte counting. These slides may deteriorate under conditions of high temperature and humidity. Blood films for Morphology and Parasite Identification are from the same batches of slides as supplied to UK NEQAS (H) participants.

Performance

Performance is generally satisfactory with 87% of participants returning acceptable (1 – 3 results with a DI >3) or excellent (no results with a DI >3) results for blood count in 2013. Evaluation of performance over a 17 year period showed a number of laboratories returning unsatisfactory Hb results decreased from 42% to 12%. There was a similar improvement in parasite identification, with unsatisfactory performance falling from 32% to 8%. Satisfactory performance helps participants demonstrate competency to third parties.

Future actions

• Fully stabilised, whole blood survey material for full blood count and automated reticulocyte count
• Web based or email return of results
• Increased use of digital media, either web based or on CD / DVD, for morphology and manual reticulocyte count
• Digital educational solutions
• Alternative funding for laboratories who do not qualify for WHO sponsorship

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WHO Region | No of Labs | Participating centres
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Africa | 10 | Democratic Republic of the Congo (2), Eritrea, Gambia, Ghana, Kenya (2), Mauritius, Tanzania, Zambia
Eastern Mediterranean | 3 | Iran, Lebanon, Pakistan
European | 5 | Croatia, Cyprus, Czech Republic, Slovak Republic, Slovenia
The Americas | 27 | Anguilla BWI, Argentina (2), Bahamas (2), Barbados, Belize, Bermuda, Bolivia, Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Grenada W.I, Guyana, Jamaica, Montserrat, Nicaragua, Paraguay, St. Kitts, St. Vincent Caribbean, Suriname, Venezuela, Virgin Islands
South East Asia | 12 | Bhutan, India (3), Indonesia (2), Malaysia, Sri Lanka (2), Thailand (2)
Western Pacific | 7 | Fiji, Hong Kong, Korea, Peoples Republic Of China (4)

IEQAS (H) participation showing WHO region and Country (2013 participation)