

# Delivering External Quality Assessment for the World Health Organisation

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## 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.

## The challenges

**Logistics** - Long transit delay specimen delivery and return of reports. There is no funding for courier services.

**Material stability and suitability.** The simple, robust, IEQAS (H) survey material was designed for more basic technology than that now used by many participants

**Communications** –The use of email and the internet has improved communications, as these are more reliable than post or fax in many regions. Postal services are still necessary for delivery of specimens.

**Language barrier** - Services are delivered in English. This is not the first language of most of the participants.

**Local disruption** – Civil disturbance and natural disasters may affect service delivery.

**Affordability** - The WHO only funds selected laboratories and there are many more who would like to take part.

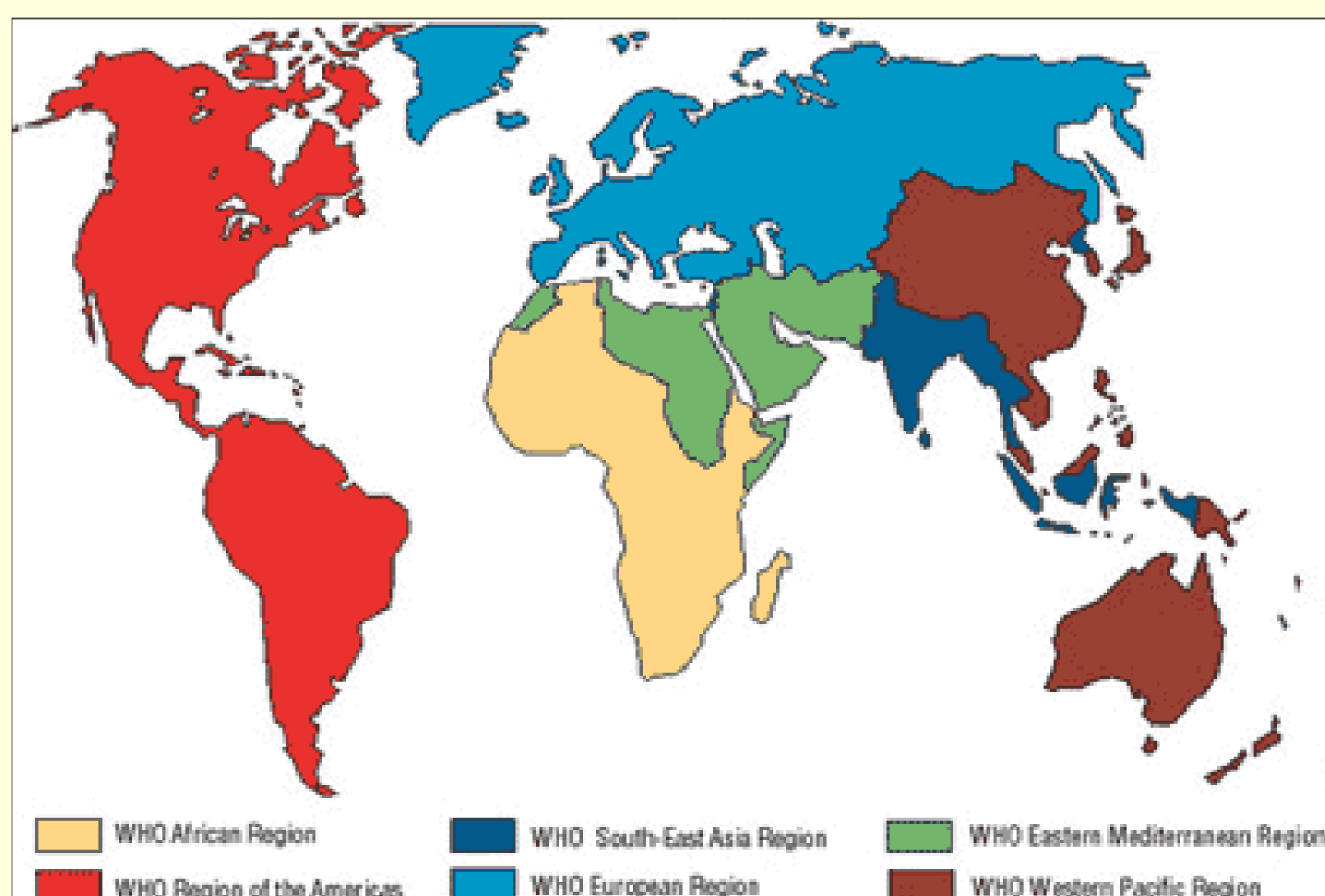
## Survey Material

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-vitally 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.



The WHO regions

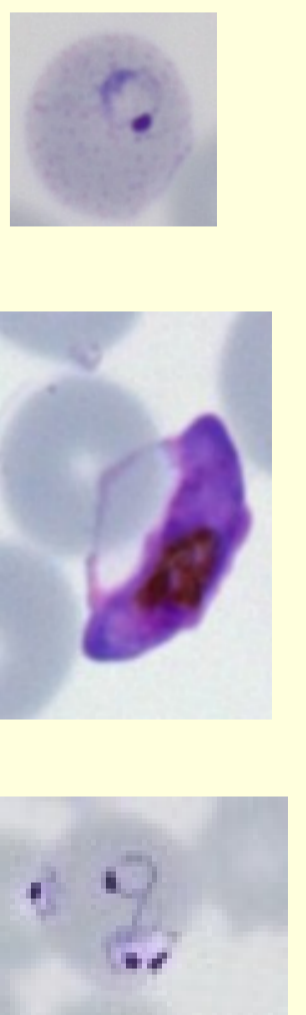
## Performance

**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 the 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.

Teaching sheets support performance improvement. The WHO Collaborating Centre has embraced new technology, working with Manchester Metropolitan University on a WHO sponsored project to develop digital teaching galleries for Malaria and Peripheral Blood Morphology.



## 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

## Acknowledgements

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WHO Region	No of Labs	Participating centres
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)