

**EXTERNAL QUALITY ASSURANCE OF M TUBERCULOSIS DRUG SUSCEPTIBILITY
TESTING. RESULTS FROM THE 2006 ROUND OF THE STOCKHOLM SUPRA NATIONAL
REFERENCE LABORATORY SUB-NETWORK**

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In 1994, the WHO initiated a network of selected National Reference Laboratories (NRL) to support and improve the quality of TB laboratories globally, especially in drug susceptibility testing (DST). Since then the Supranational Reference Laboratory Network (SRLN) has participated in yearly proficiency testing, as well as has additionally offered, and organised such testing for the neighbouring countries NRL. Today, this network comprises 25 laboratories located in all five WHO regions. It is coordinated by the Prince Léopold Institute of Tropical Medicine in Antwerp, Belgium, which sends a panel of 30 coded well-characterised isolates for susceptibility testing of the following four first-line drugs - Isoniazid (INH), Streptomycin (SM), Rifampicin (RMP) and Ethambutol (EMB).

In 2006 a 20-strain panel (based on the 30-strain WHO panel) was established by the SRL in Stockholm and distributed to nine European reference laboratories (in Denmark, Estonia, Finland, Latvia, Lithuania, Norway and Romania). Moreover five Swedish clinical TB – laboratories conducting DST of M tuberculosis were included in this external quality assurance (EQA) network.

Results Results from this proficiency test study for Streptomycin showed 90,8% sensitivity (ability to detect true R), 97,5% specificity (ability to detect true S) and 94,5% efficiency (number of correct results divided by total number of results). Corresponding figures for Isoniazid were 99,4%, 89,1% and 95,3%, for Rifampicin 98%, 94% and 96%, for Etambutol 82%, 100%, and 94%, respectively. Six of the participating laboratories used the MGIT 960 method, four laboratories used the radiometric Bactec 460 system, and the remaining four laboratories used the proportion method on solid medium.

Conclusion The laboratory determination of drug resistance of *M tuberculosis* in the laboratories included in this network is reliable and trustworthy. Since the start of the EQA programme, significant progress in the quality of, and an increased standardisation of the DST, have been obtained. Participation in an EQA programme is a good way to obtain, document and maintain high-quality results of drug susceptibility testing, and should be promoted generally in national TB control programmes.