Eastern European Network for Sexual and Reproductive Health: Optimization and Quality Assurance of Management of Sexually-transmitted Infections in Eastern European Countries

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During the last 20 years, Eastern European (EE) countries have undergone major changes, including the development of their national health care. However, sexually transmitted infections (STIs) remain an unrecognized, significant public health problem in the majority of EE countries. The World Health Organization (WHO) in its “Global strategy for prevention and control of STIs for 2006–2015” stated that it is crucial to increase the commitment of national governments and to use integrated approaches in order to address the problem (1).

The aim of the present paper is to report on the activities, products and implementations at the national level performed by the Eastern European Network of Sexual and Reproductive Health (EE SRH Network). The EE SRH Network, a group of international multidisciplinary collaborators, was established in 2007 to endorse the work of the WHO by promoting cooperation at both national and international levels, by surveying, evaluating and developing internationally acknowledged consensus approaches for the management of STI (2–4). At present, the EE SRH Network includes 16 EE countries (Fig. 1).

It has long been recognized that laboratory testing plays an essential role in patient management and epidemiological surveillance of STIs. Results of national surveys (5–18), conducted in countries included in the EE SRH network, demonstrate that individual tests and approaches used to establish a diagnosis often do not comply with international standards. For example, serological tests are used to diagnose genital chlamydial infections in many EE countries, while screening for gonococcal infections in women is largely conducted by using microscopy of Gram-stained cervical smears. In addition, few laboratories use type-specific herpes simplex virus (HSV) serology for the diagnosis of genital herpes (19).

In collaboration with international experts, efforts have been made to harmonize methods used for the laboratory diagnosis of STIs with those recommended by international organizations, such as the International Union against STIs (IUSTI), the WHO, and the US Centers for Disease Control and Prevention (CDC). Fourteen EE countries have approved and published consensus guidelines regarding the laboratory diagnostics of STIs. These guidelines were developed by the network participants during many EE SRH network meetings, based on international guidelines and using evidence-based principles. This approach stimulated direct communication between leading STI experts from “East” and “West”, resulting in consensus documents, which were first published internationally (20–26) and then subsequently adopted and published at the national level (2–4).

It is recognized that both the quality of test kits and the implementation of quality assurance systems contribute to the confidence in results and the reputation of diagnostic services. STI diagnostic test kits manufactured in EE countries, which are more cost-effective than international kits, have rarely been internationally validated. The EE SRH network has conducted a number of studies comparing Russian-manufactured tests for the detection of the STI agents, namely Chlamydia trachomatis (27), Neisseria gonorrhoeae (28, 29), Mycoplasma genitalium (30) and Trichomonas vaginalis (31) with internationally acknowledged methods, which yielded promising results. In contrast, media used for the culture of gonococci, and serological testing, namely the microprecipitation reaction (analogue to the Venereal Disease Research Laboratory (VDRL) test), used for serological screening for syphilis, both demonstrated the need for urgent quality improvements (32).

It is clear that the regional biomedical industry has the potential for producing reliable reagents and tests kits at affordable prices; however, strict quality assurance is crucial (27–32). Comprehensive evaluations of locally manufactured tests should be conducted according to internationally accepted guidelines as a prerequisite to marketing products in the region. In addition, other issues related to laboratory quality assurance have emerged as a high priority for many EE countries. The establishment of an extensive external quality assurance
(EQA) programme for the serological diagnosis of syphilis in Russia has revealed a number of difficulties, including lack of willingness to participate and high rates of false-positive/negative results (33). Such programmes should be extended to include all laboratory testing, with appropriate sanctions being implemented for those laboratories that consistently fail to provide satisfactory results.

Another factor that is necessary to assure high-quality laboratory practices is the establishment of national or regional reference laboratories for STIs, preferably supported and financed by the state authorities. At present, there are no such institutions in EE. Such institutions could provide a source of expertise to support national or regional STI initiatives, perform reference testing and collect surveillance data. In addition, these laboratories could maintain EQA programmes, supervise updating of national STI laboratory guidelines and establish international collaborations (34).

Only a minority of the EE SRH Network countries have previously adopted the international standards for quality assurance systems, e.g. International Organization for Standardization (ISO) 15189. The network is encouraging the adoption of these standards in all remaining network countries. A standard protocol for accreditation of laboratories has been developed, adopted and published in both Russia and Belarus (2).

The emergence and spread of antimicrobial resistance (AMR) in *N. gonorrhoeae* is recognized as a major concern globally. However, in the majority of the EE countries AMR testing of *N. gonorrhoeae* isolates is performed only occasionally, because gonococcal culture is rarely available (35). The use of microscopy or nucleic acid amplification tests (NAATS) only for the diagnosis of STIs, and the complexity of the transportation of viable gonococci to the laboratory diminishes the possibility of culture usage. AMR surveillance for *N. gonorrhoeae* in the EE SRH network countries has been initiated, according to WHO methodology, with expertise and support from the WHO Collaborating Centre for Gonorrhoea and other STIs, Swedish Reference laboratory for Pathogenic Neisseria, Örebro University hospital (36–40). EE SRH countries participating are supported by provision of training, WHO quality control strains and reagents to enable them to initiate collection of *N. gonorrhoeae* strains for AMR testing. Successful collaboration with the Russian Reference Centre for STIs resulted in availability of the standardized data from Russia and several international publications (38–39). For the third consecutive year Belarus routinely collects isolates of gonococci and performs their AMR analysis under the supervision of the WHO Collaborating Centre for Gonorrhoea and other STIs in Örebro (40). Isolates from Poland and Estonia are also currently being analysed.

In addition to laboratory guidelines, STI patient management guidelines have been developed within the framework of the EE SRH network, in Lithuania, Bulgaria, Russia and Belarus (2).

Finally, most EE countries inherited complicated and labour-intensive communicable disease surveillance systems. STI surveillance is largely suboptimal, owing to old-fashioned, non-standardized, paper-based surveillance systems and the absence of computer-based statistical tools (41). Furthermore, legal constraints have been shown to be a potential barrier for good STI surveillance. Surveillance systems for STIs differ from one country to another depending on the availability of laboratory services and the accessibility of healthcare-provider institutions. In order to standardize and quality assure data collection and analysis, we have devised an electronic computer-based system for communicable disease surveillance that has been implemented in Lithuania (42). Implementation of an identical system is currently in progress in Belarus.

In conclusion, EE and its healthcare systems are experiencing significant change. Modern technologies, sophisticated assays and diagnostic strategies are being introduced. Collaboration with countries with well-functioning healthcare structures is therefore crucial. Since its formation, the EE SRH Network has been effective in facilitating this process.

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References


If one of the authors (Marius Domeika) would like to invest in another carrier he has an unknown skill as a singer. The photo is taken from a congress in Moscow where he “performed”.
(Comment from the Editor.)