

## THE ROLE OF LOCAL AND NATIONAL ANTIBIOTIC POLICIES IN PREVENTING ANTIMICROBIAL RESISTANCE

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Antimicrobial resistance is a worldwide threat. Individual patients acquire infections by microorganisms against which no effective antibiotic is available. Antimicrobial use, both in humans and in the veterinary sector, is the major factor driving resistance. Poor hygienic practices increase the spread of resistant microorganisms in hospitals. A multidisciplinary approach is needed to curb increasing antimicrobial resistance. To develop and sustain preventive policies, close collaboration between the relevant professional groups is needed. Relevant professionals are clinicians and microbiologists, pharmacists/ pharmacologists, infectious diseases physicians, but also epidemiologists, infection control - and veterinary specialists. Governments should prioritize this major issue.

The WHO and EU recommendations on antimicrobial resistance control can be used as a starting point. A national Intersectoral Co-ordination Mechanism (ICM) in the field of antimicrobial resistance is essential for structure and authority. The Ministry of Health should appoint the members of the ICM proposed by the relevant professional groups and give them a mandate.

The major tasks of the ICM are:

- The setup and the coordination of a national surveillance system for microbial resistance and antimicrobial drugs
- Linking resistance to use to identify targets for action
- Quality-of-use audits, preferably in a research setting, both in hospitals and in the community to expose the problems
- Tailored intervention strategies should then be developed. Successful intervention strategies are recently reviewed by a

Cochrane group

- The development of an evidence based guideline program on diagnosis and therapy of Infectious Diseases
- The establishment of training programs for good antibiotic stewardship should be established. Academy should make their scientists available for research in this topic and for education.

The European Society of Clinical Microbiology and Infectious Diseases (ESCMID) support the Scientific Study Group for Antibiotic Policies ESGAP. ESGAP has a wide membership and its Executive Committee is involved in postgraduate training programs and scientific activities at the European level.

An example of a national initiative on policies in preventing antimicrobial resistance is the government-funded Dutch Working Party on Antibiotic Policy (SWAB). The Dutch Working Party on Antibiotic Policy (Stichting Werkgroep AntibioticaBeleid, SWAB) was founded in 1996 as an initiative of the Society for Infectious Diseases (V.I.Z.), the Dutch Society for Medical Microbiology (N.V.M.M.), and the Dutch Association of Hospital Pharmacists (N.V.Z.A.). SWAB's major goals are to contain antimicrobial resistance and limit the costs of the use of antimicrobial drugs. This is achieved by optimising the use of antimicrobial drugs through guideline development, education, and surveillance of antibiotic use and resistance. In 2001, SWAB was designated by the Dutch Ministry of Health, Welfare and Sports to co-ordinate the national surveillance of antibiotic resistance, and structural funds were provided. A collaboration with the Centre for Infectious Disease Control (CiB) was formalised. In addition, a platform with the Veterinary Antibiotic Usage and

Resistance Surveillance Working Group (VANTURES) was created ([www.cidc-lelystad.nl](http://www.cidc-lelystad.nl)). When the "Council Recommendation on the prudent use of antimicrobial agents in human medicine" (2002/77/EC) was issued, the SWAB became the Intersectoral Coordinating Mechanism (ICM) for the Netherlands.

Since its conception, SWAB has developed national guidelines for the use of antibiotics, which are aimed at the hospitalised adult patient. Guidelines were published in the major national medical journal (Nederlands Tijdschrift voor Geneeskunde). Initially, the draft guidelines were prepared by a writing committee, selected by SWAB, consisting of 5 to 10 experts (medical microbiologists, infectious diseases specialists, hospital pharmacists and medical specialists relevant to the specific topic). After review by another 25 experts, the guidelines were finalised and published.

In 2001, a survey among hospital antibiotic policy committees revealed that the majority of respondents were aware of the guidelines issued by SWAB, but it was suggested that draft guidelines should be made more broadly available, e.g. on the internet, and with a transparent method for grading the strength of the evidence on which the guideline was based. In 2003 the AGREE (Appraisal of Guidelines, REsearch and Evaluation) collaboration made available a validated instrument of evidence-based guideline development that can be used to improve the quality of guidelines. A distinct and specific feature of infectious diseases guidelines is that local epidemiology and resistance data must be taken into account, and NethMap had provided this information. As a result of the user survey, the availability of the AGREE instrument and national resistance data SWAB's guideline programme was revised in 2005<sup>(5,6)</sup>. The new procedure included the consultation of the concerned professional societies for delegating experts to the writing committee, and giving all members the opportunity to comment on draft guidelines. After final approval by the board, the SWAB guidelines are posted on the SWAB website ([www.swab.nl](http://www.swab.nl)). In addition, published versions (in English) of the guidelines including a comprehensive literature review are freely down-

loadable through PubMed. Implementation of the guidelines in hospitals was studied by van Kasteren et al. in government-funded research (Van Kasteren, Manniën *et al.* 2005).

Following a survey among Dutch hospital antibiotic policy committees based on the HARMONY tool, a complete, electronic national antibiotic treatment guide 'SWAB-ID' was compiled in 2006. This guide also contains a formula on all antimicrobial drugs available in The Netherlands. Selection of antimicrobial drugs and dose regimens are based on existing national evidence-based guidelines, where available. Where no guideline is available, the advice is based on an inventory of the antibiotic policies of the 12 Dutch centres with an infectious diseases or medical microbiology training programme. The national antibiotic guide can be accessed through the SWAB website (<http://customid.duhs.duke.edu/NL/Main/Start.asp>) and can also be downloaded on PDA/PocketPC, free of charge. The guide is updated regularly, for instance when new guidelines are issued or new antimicrobial agents become available.

Hospital antibiotic committees in the Netherlands can edit the national version for local use. For a relatively small fee, SWAB provides a copy of the national version, that can be customized to a local version that remains accessible through the internet, and downloadable on PDA. So far, 6 out of 8 university hospitals, and 10 general hospitals or hospital groups are now using their local version of the national SWAB guide. The antibiotic committees implement the adapted, local policy in the respective hospitals.

SWAB has provided expertise for a project in Eastern Europe that is financed by the Netherlands Ministry of Foreign affairs through the EVD agency Matra, Pre-Accession Programme MPAP programme in 2006.

The project aimed to contribute to the accession of Croatia to the European Union, more precisely to assist Croatia in implementing EU-directives and recommendations in the field of antimicrobial resistance and the sound use of antibiotics.

Experts assisted the Croatian Ministry of Health in initiating an Intersectoral Coordination

Mechanism (ICM), ISKRA, for control of antimicrobial resistance. After two years, the project resulted in an established and functioning ICM, the Intersectoral Society for Antibiotic Resistance Control (ISKRA). The existing surveillance system for antimicrobial resistance was strengthened and a programme of guidelines for the prudent use of antibiotics was set up. The example of the SWAB helped to involve all important organizations and individuals in the field of antimicrobial resistance in Croatia for the building of the ICM and the acceptance of the guideline program by users. With methodological support of SWAB and expert consultants, the ISKRA guideline committees have produced four major evidence based guidelines for hospitals and the community.

Worldwide, new antimicrobial drugs are developed by the pharmaceutical industry. The need for financial returns for their effort is driving markets, which leads to overuse if commercial pressure is not counterbalanced by a strong scientific and professional community, supported by national policy makers. Therefore, worldwide, efforts should be made to reconcile interests of the producers and policy makers, the public and the medical community, to maximally conserve the potential of the available and affordable antimicrobial drugs and stimulate the research on new antimicrobial drugs.

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