

The ECDC view towards an European strategy

Introduction

Antimicrobial resistance (AMR) is of concern for EU as well as for WHO. Many initiatives have been taken by EU Health Council and within the Commission. A large number of projects have been funded through EU, and there is a Council recommendation for strategy.

The different projects have and still are generating a large amount of data, mostly on surveillance of usage of antibiotics and resistance patterns. There is an added value to collect data from different projects in such a way that data are comparable i.e. similar criteria for collection and validation of data. Projects have accomplished this to some extent but more work needs to be done.

There are less data on interventions. Where interventions have been introduced few of them have been evaluated. This may partly be because few systematic interventions have been used. It would be of added value to collect but also to initiate studies and reports on interventions. Of special interest is to analyze costs of AMR and put that in relation to costs for interventions.

The mechanisms behind emerging AMR resistance is complex but can be simplified to two main issues: the use of antibiotics and the epidemiological spread of resistant microbes. The impact of both these issues can be diminished by preventive actions. Two areas for prevention are of special interest, infection control and immunizations. There are other reasons why these areas are of importance for health but they are also of big importance for combating AMR.

Countries have expressed interest in getting support for their work with AMR. This should be encouraged.

Since the area of AMR has many facets there are a number of activities that to a larger or lesser extent have importance. Some of them are incorporated in the ECDC's work plan. One particularly important issue is to establish good collaboration with veterinary medicine.

ECDC's program on AMR is planned to run for a number of years. At present timetables are being looked at as well as costs for specific activities connected to the different objectives. All units of ECDC will be involved to some extent depending on objectives and activities. The work that is presently done in different projects will be supported. External help will be looked for when appropriate. ECDC's main role will be to coordinate and support technical activities especially interventions and also to identify areas that are not covered but would need technical support. A close collaboration with all stakeholders is essential.

Since the program will run for some years an update of the work plans needs to be done regularly to see what has been achieved, what new elements might need to be incorporated in the work plan and what should be omitted.

Previous work

EU has supported a number of projects in the field of AMR. A thorough review of this has been published in Eurosurveillance Jan 2004.

EU and WHO have made policy statements, the latest documents are:

1. Council Recommendation on the prudent use of antimicrobial agents in human medicine (2002/77/EC) (Implementation report by end of year 2005)

2. Regulation (EC) No 1831/2003 of the European Parliament and of the Council on additives for use in animal nutrition
3. World Health Assembly – WHA (WHO): Resolution “Improving the containment of antimicrobial resistance” WHA58.27 (25 May 2005)

DG SANCO has funded projects of importance for AMR. Still running are the following:

- European Antimicrobial Resistance Surveillance System (EARSS) - follows resistance of indicator bacteria from 31 countries
- Scientific Evaluation on the Use of Antimicrobial Agents in Human Therapy (ESAC) – collects comparable antibiotic consumption data from 34 countries
- European Committee on Antimicrobial Susceptibility Testing (EUCAST) – was set up to harmonise susceptibility testing
- Self medication with antibiotics and resistance levels in Europe (SAR)
- International surveillance network for the enteric infections (Enter-net) - follows salmonella and will follow *E.coli* and campylobacter susceptibility

A number of other surveillance systems monitor also the susceptibility of pathogen under surveillance:

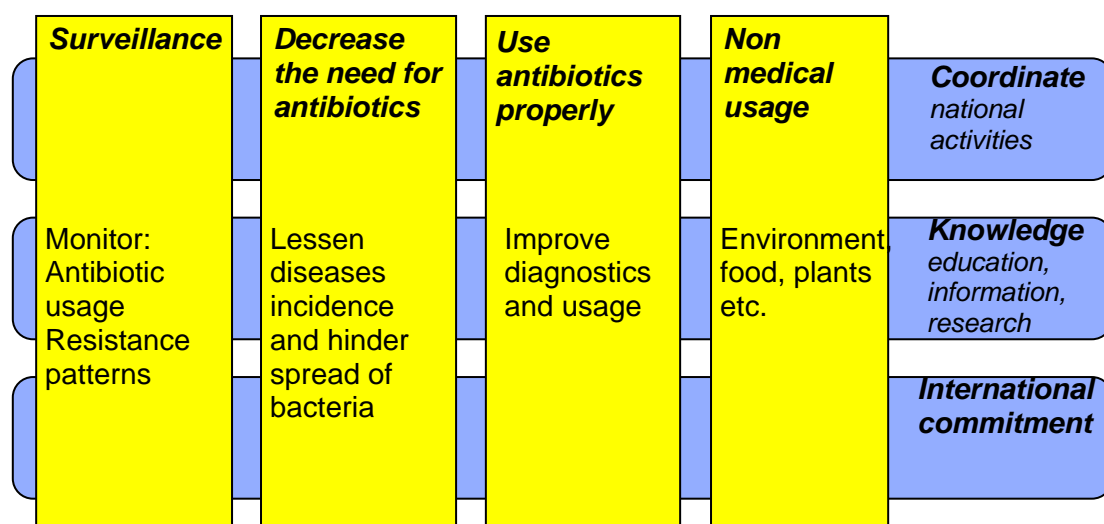
- EU Invasive Bacterial Infectious Surveillance (EU-IBIS) - invasive *Haemophilus influenza* and *Neisseria meningitides* susceptibility;
- Surveillance of tuberculosis in Europe (EuroTB) – follows MDR-TB;
- European Surveillance of Sexually Transmitted Infections (ESSTI) - monitors susceptibility of gonorrhoea;
- Hospitals in Europe Link for Infection Control through Surveillance (HELICS), now followed by : Improving Patient Safety in Europe (IPSE);

‘The misuse of a miracle’ is a public TV-film on antimicrobial resistance funded by the Public Health Programme to be broadcasted all over Europe

DG Research has funded projects for biochemical and public health research. Since 1999 € 20-30 million yearly have been dedicated for research in connection with antimicrobial resistance

Action plan for ECDC

A strategy to combat AMR will need very diverse actions since there are many mechanisms that drive the emergence of AMR. A way to illustrate the complexity can be seen in the following illustration.



It has so far been difficult to evaluate to what extent each component affects AMR but each issue has importance. A strategy for combating AMR for ECDC will need to evaluate each issue, and then work on those parts that fall within ECDC's competence.

ECDC is organized as a matrix organization. This means that in the AMR project all units of ECDC will take part to some extent. The AMR project will coordinate activities. Some of the activities will be funded for groups outside ECDC to work with.

Surveillance

The basis for all strategies is to know what the resistance patterns look like, to be able to follow trends and to detect emerging events. Of equal importance is to know the amount of antibiotics used. When collecting systems improve there will be a need to refine the collected data with more precise information. ECDC will

- Coordinate existing networks and develop a strategy for how data will be delivered to and kept in ECDC
- Review the comprehensiveness and comparability of data. Support further harmonization of methods and breakpoints
- Add and/or improve resistance components in relevant surveillance networks
- Ensure rapid communication on particularly resistant, emerging strains of bacteria

Decrease the need for antibiotics

An important and often forgotten issue is the possibility to diminish the need of antibiotics. There are at least two main areas where compliance with the programs has an immediate effect on antibiotic consumption.

- Diminishing healthcare-associated infections by promoting actions to improve infection prevention and control in the health care sector at large
- Promote immunization programs supporting and strengthening present strategies in collaboration with WHO

Use antibiotics properly

“Proper use” is a difficult term both in human and veterinary medicine. Still there is a need to find some common view on what is “proper”. ECDC will support these efforts even though this is a task for the medical societies.

- Promote the prudent use of antibiotics

Non medical usage

Antibiotics are used in a wide variety of fields. Other agencies within EU have responsibilities within those fields. There is a special need for cooperation between human and veterinary medicine. Diagnostic principles and similar antibiotics are used. This becomes especially evident with zoonotic diseases.

- Foster close collaboration with veterinary medicine and EFSA to improve further susceptibility monitoring for zoonotic pathogens (e.g. salmonella, campylobacter) for inclusion in Community report on zoonoses.
- Establish collaboration with veterinary organizations

Coordinate national activities

In the Council recommendation as well as in statements from the Commission there is an expectation that ECDC will give direct support to countries that so request. ECDC will

- Provide expertise in the development of intervention strategies for countries with low, medium and high resistance levels based on models for stepwise intervention strategies
- Give active support to countries on request to improved adherence to Council recommendations
- Initiate coordinating meetings with National Coordinating Groups to harmonization of AMR work in MS

Knowledge - education, information, research

Education and information - The understanding of the problem with AMR is the basis for having an impact with interventional programs. This is true both for the general public as for professionals. ECDC will have an important task to provide scientifically accurate and understandable information.

- Provide scientifically based information to public and professionals
- Provide risk assessment where needed
- AMR conference in 2006-2007 where MS may show to public the advances made in the field of containment of AMR

Research

Public health research – There are many scientific obstacles in evaluating data from interventions. Still, these data are of help, if used with caution and always reevaluated, to guide governments in their strategies.

- Monitor and foster public health research especially on public health interventions

New antibiotics - The lack of investment in R&D on new antibiotics by the pharmaceutical industry is a widely acknowledged problem. There could potentially be a role for the ECD to take a leadership on this issue: to chart the hurdles and to see what could be done collectively in Europe to overcome them.

- Establish collaboration with pharmaceutical industry

New diagnostic tools – availability of rapid clinical tests in combination with criteria for case definitions could be of value for better usage of antimicrobials. ECDC would support such efforts even if this is out of the scope for ECDC.

Evidence-based public health actions – a target for ECDC activities - Interventions in public health may be difficult to evaluate since there always will be confounding factors, Even so there is a need to use data that are available to evaluate interventions as well as possible. A collection of available data should be gathered. In specific areas guidelines could be developed.

- Evaluate the scientific basis for interventions
- Cost-benefit analysis of AMR vs. intervention actions
- Develop guidelines on good practice and on protective measures
- Facilitate sharing of information and experience of PH actions in MS

Member state and international commitment

AMR is an international concern.

- Actively work with the MS and Commission to bring the ‘Community strategy against AMR’ further
- Foster implementation of successful EU-activities and networks in neighbouring countries (neighbourhood policy)
- Take an active part in global activities – like REACT and WHO.