

EUROPEAN PARLIAMENT

1999



2004

Session document

FINAL
A5-0318/2001

9 October 2001

REPORT

on the proposal for a Council recommendation on the prudent use of
antimicrobial agents in human medicine
(COM(2001) 333 – C5-0411/2001 – 2001/2164(COS))

Committee on the Environment, Public Health and Consumer Policy

Rapporteur: Didier Rod

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PROCEDURAL PAGE

By letter of 20 June 2001, the Commission forwarded to Parliament the proposal for a Council recommendation on the prudent use of antimicrobial agents in human medicine(COM(2001) 333 – 2001/2164(COS)).

At the sitting of 19 September 2001 the President of Parliament announced that she had referred this proposal for a recommendation to the Committee on the Environment, Public Health and Consumer Policy as the committee responsible and to the Committee on Agriculture and Rural Development, the Committee on Culture, Youth, Education, the Media and Sport and the Committee on Employment and Social Affairs for their opinions (C5-0411/2001).

At its meeting of 28 August 2001 the Committee on the Environment, Public Health and Consumer Policy had appointed Didier Rod rapporteur.

It considered the proposal for a Council recommendation and the draft report at its meetings of 17 September and 9 October 2001.

At the last meeting it adopted the motion for a resolution by 42 votes to 4, with 4 abstentions.

The following were present for the vote: Caroline F. Jackson (chairman, Alexander de Roo and Ria G.H.C. Oomen-Ruijten (vice-chairmen), Didier Rod (rapporteur, for Marie Anne Isler Béguin), Per-Arne Arvidsson, María del Pilar Ayuso González, Jean-Louis Bernié, Hans Blokland, David Robert Bowe, John Bowis, Dorette Corbey, Avril Doyle, Anne Ferreira, Marialiese Flemming, Karl-Heinz Florenz, Cristina García-Orcoyen Tormo, Laura González Álvarez, Robert Goodwill, Françoise Grossetête, Cristina Gutiérrez Cortines, Heidi Anneli Hautala, Mary Honeyball (for Torben Lund), Anneli Hulthén, Hedwig Keppelhoff-Wiechert (for Martin Callanan), Christa Kieß, Hans Kronberger, Bernd Lange, Paul A.A.J.G. Lannoye (for Hiltrud Breyer), Minerva Melpomeni Malliori, Patricia McKenna, Emilia Franziska Müller, Rosemarie Müller, Riitta Myller, Giuseppe Nisticò, Karl Erik Olsson, Marit Paulsen, Encarnación Redondo Jiménez (for Eija-Riitta Anneli Korhola), Frédérique Ries, Dagmar Roth-Behrendt, Giacomo Santini, Karin Scheele, Horst Schnellhardt, Inger Schörling, María Sornosa Martínez, Dirk Sterckx (for Chris Davies), Catherine Stihler, Antonios Trakatellis, Joaquim Vairinhos, Kathleen Van Brempt (for Béatrice Patrie) and Phillip Whitehead.

The Committee on Agriculture and Rural Development, the Committee on Culture, Youth, Education, the Media and Sport and the Committee on Employment and Social Affairs decided on 12 and 18 September 2001 respectively not to deliver an opinion.

The report was tabled on 9 October 2001.

The deadline for tabling amendments will be indicated in the draft agenda for the relevant part-session.

MOTION FOR A RESOLUTION

European Parliament resolution on the proposal for a Council recommendation on the prudent use of antimicrobial agents in human medicine (COM(2001) 333 – C5-0411/2001 – 2001/2164(COS))

The European Parliament,

- having regard to the proposal for a Council recommendation (COM(2001) 333 – C5-0411/2001¹),
- having regard to Rule 152(4) of the EC Treaty,
- having regard to Rule 47(1) of its Rules of Procedure,
- having regard to the report of the Committee on the Environment, Public Health and Consumer Policy (A5-0318/2001),

1. Calls on the Commission and the Council to take account of the following modifications:

Commission draft	Modifications by Parliament
<hr/>	
Modification 1	
Recital 1	
<p>(1) The use of antimicrobial agents has greatly contributed to improvements in health. Such “antimicrobial agents” have been introduced for decades to treat communicable diseases and prevent infections.</p> <p>For the purposes of this Recommendation, antimicrobial agent means substance produced either synthetically or naturally by bacteria, fungus or plants, used to kill or inhibit the growth of micro-organisms including bacteria, viruses and fungus, and of parasites, in particular protozoa, exhibiting the phenomenon of resistance. However, their use has also resulted in certain selected microbes previously sensitive to these agents developing resistance, so-called</p>	<p>(1) The use of antimicrobial agents has greatly contributed to improvements in health. Such “antimicrobial agents” have been introduced for decades to treat communicable diseases and prevent infections.</p> <p>For the purposes of this Recommendation, antimicrobial agent means substance produced either synthetically or naturally by bacteria, fungus or plants, used to kill or inhibit the growth of micro-organisms including bacteria, viruses and fungus, and of parasites, in particular protozoa, exhibiting the phenomenon of resistance. However, their use has also resulted in certain selected microbes previously sensitive to these agents developing resistance, so-called</p>

¹ OJ C

“antimicrobial resistance”. This leads to increased danger, to prolonged suffering of the individual, and to enhanced costs for health care and society.

Therefore concerted action is necessary at Community level to contain this problem by encouraging the prudent use of antimicrobial agents in human medicine and better hygiene and infection control;

“antimicrobial resistance”. This leads to increased danger, to prolonged suffering of the individual, and to enhanced costs for health care and society.

Therefore concerted action is necessary at Community level to contain this problem by encouraging the prudent use of antimicrobial agents in human medicine and better hygiene and infection control. ***This action cannot be taken in isolation from measures to combat resistance to antibiotics in veterinary medicine, animal feedstuffs and crop growing (including GM crops).***

Modification 2 Recital 2

(2) The Council of the European Union on 8 June 1999 adopted a Resolution on antibiotic resistance "A strategy against the microbial threat". The Resolution highlights that antimicrobial resistance increases morbidity and mortality due to communicable diseases leading not only to a diminution of quality of life but also to additional health and medical care costs, and that actions need to be taken at Community level;

(2) The Council of the European Union on 8 June 1999 adopted a Resolution on antibiotic resistance "A strategy against the microbial threat". The Resolution highlights *the fact* that antimicrobial resistance increases morbidity and mortality due to communicable diseases leading not only to a diminution of quality of life but also to additional health and medical care costs, and that action needs to be taken at Community level ***to reduce the use of antimicrobial agents in veterinary as well as human medicine, in animal feedingstuffs and in plant health protection, and to prohibit the use of resistance marker genes in GMOs;***

Modification 3 Recital 6

(6) Surveillance *on* prescription and consumption of antimicrobial agents should form an essential component for an overall surveillance strategy to address the problem of antimicrobial resistance;

(6) Surveillance *of the* prescription and consumption of antimicrobial agents ***in all fields*** should form an essential component for an overall surveillance strategy to address the problem of antimicrobial resistance;

Modification 4
Recital 7

(7) An important step to avoid or even reverse further increases in resistant micro-organisms would be to reduce unnecessary and inappropriate use of antimicrobial agents. General principles and methods for the prudent use of these agents in humans must be identified, and defined and implemented;

(7) An important step to avoid or even reverse further increases in resistant micro-organisms would be to reduce unnecessary and inappropriate use of antimicrobial agents. General principles and methods for the prudent use of these agents in humans, ***animals and plants*** must be identified, and defined and implemented;

Modification 5
Recital 11

(11) There is also a relationship between the occurrence of antimicrobial resistant pathogens in humans and their occurrence in animals and the environment. This Recommendation ***does not preclude*** further initiatives in other areas;

(11) There is also a relationship between the occurrence of antimicrobial resistant pathogens in humans and their occurrence in animals and the environment. This Recommendation ***requires*** further initiatives in other areas, ***in particular to combat antimicrobial resistance in veterinary medicine, animal feedingstuffs and crop growing (including GMOs)***;

Modification 6
Recital 13a (new)

(13a) The strategy against microbial resistance needs to be a global one and should cover not only human medicine but also veterinary medicine, animal production and plant protection,

Modification 7
Chapter I, paragraph 1, subparagraph 1

(1) gather reliable, comparable **data** by means of a laboratory based system *of* the susceptibility of pathogens to antimicrobial agents. The data should be amenable to time trend analysis and early warnings and to monitor spread of resistance at national, regional and community level;

(1) gather reliable **data**, comparable **at Community level** by means of a laboratory based system *on* the susceptibility **in vitro** of pathogens to antimicrobial agents **and their clinical implications**. The data should be amenable to time trend analysis and early warnings and to **monitoring the** spread of resistance at national, regional and community level;

Modification 8
Chapter I, paragraph 1, subparagraph 2

(2) collect data on prescription and consumption of antimicrobial agents **on** national, regional, hospital and community level, involving prescribers, pharmacists and other parties collecting such data, in order to be able to potentially link prescription and consumption of antimicrobial agents to the development of pathogens resistant to those agents.

(2) collect data on prescription and consumption of antimicrobial agents **in all their forms and in all fields at** national, regional, hospital and community level, involving prescribers, pharmacists and other parties collecting such data, in order to be able to potentially link prescription and consumption of antimicrobial agents to the development of pathogens resistant to those agents.

Modification 9
Chapter I, paragraph 2, subparagraph 1, indent 2

- Setting rules for the use of other antimicrobial agents that are not subject to requirements for prescription-only use and an assessment of the need for changes;

- Setting rules for the use of other antimicrobial agents, **especially for local use**, that are not subject to requirements for prescription-only use and an assessment of the need for changes;

Modification 10

Chapter I, paragraph 2, subparagraph 1, indent 3

- Establishment of clinical and microbiological criteria for rapid on-the-spot diagnosis of infections, and

- Establishment of clinical and microbiological criteria ***and the evaluation of tests*** for rapid on-the-spot diagnosis of ***bacterial or viral*** infections, ***and of tests for sensitivity to antimicrobial agents***, and

Modification 11

Chapter I, paragraph 2, subparagraph 1, indent 4

- Optimising choice of drug, dosage and duration for the treatment and prevention of infections.

- Optimising ***the*** choice of drug, dosage and duration for the treatment and prevention of infections, ***on the basis of microbiological and clinical criteria and the patient's personal data and medical history (individualised treatment)***.

Modification 12

Chapter I, paragraph 2, subparagraph 1, indent 4a (new)

- a comparative and critical assessment of the effectiveness of antimicrobial agents used for preventive purposes;

Modification 13

Chapter I, paragraph 2, subparagraph 3

(3) Encouraging national immunisation programmes to progressively eliminate vaccine preventable diseases,

(3) Encouraging national immunisation programmes to progressively eliminate vaccine preventable diseases, ***after a comparative and critical reassessment of the effectiveness of the vaccines concerned and the immunisation programmes under consideration,***

Modification 14
Chapter I, paragraph 3, subparagraph 1

(1) teaching principles and guidelines on the appropriate use of antimicrobial agents by incorporation into undergraduate and postgraduate training and in regular continuous training for physicians, dentists, pharmacists and nurses and others in the medical profession, using effective good practice methods with continuous feedback;

(1) teaching principles and guidelines on the appropriate use of antimicrobial agents by incorporation into undergraduate and postgraduate training and in regular continuous training, ***independent of the drugs industry***, for physicians, dentists, pharmacists and nurses and others in the medical profession, using effective good practice methods with continuous feedback;

Modification 15
Chapter I, paragraph 3, subparagraph 3

(3) training on immunisation programmes ***and*** their role in preventing infections, thereby reducing outbreaks of diseases and thus the demand for antimicrobial agents.

(3) ***critical, continuing and updated*** training on immunisation programmes, their role, ***their effectiveness and their relevance*** in preventing infections, thereby reducing outbreaks of diseases and thus the demand for antimicrobial agents.

Modification 16
Chapter I, paragraph 3, subparagraph 3a (new)

(3a) controlling the information, promotions and advertising channelled to the medical profession by the drugs industry and ensuring observance of good prescribing practice;

Modification 17
Chapter I, paragraph 4, subparagraph 3a (new)

(3a) prohibiting any advertising addressed to the general public promoting antibiotics;

Modification 18
Chapter I, paragraph 4, subparagraph 3a (new)

***(3a) Encouraging home treatment
wherever feasible;***

Modification 19
Chapter I, paragraph 4, subparagraph 3b (new)

***(3b) Encouraging clinical and laboratory
practice and methods to reduce the
duration of hospital care without
jeopardising the outcome of the treatment;***

Modification 20
Chapter II

II. co-operate with the Commission in the development of indicators for monitoring prescribing practices of antimicrobial agents on the basis of the evidence-based principles and guidelines on good practice for the management of communicable diseases within two years of the adoption of this Recommendation, and evaluate these indicators once developed with regard to potential improvements of prescribing practices and feedback to prescribers;

II. co-operate with the Commission in the development of indicators for monitoring prescribing practices of antimicrobial agents on the basis of the ***in vitro and clinical*** evidence-based principles and guidelines on good practice for the management of communicable diseases within two years of the adoption of this Recommendation, and evaluate these indicators once developed with regard to potential improvements of prescribing practices and feedback to prescribers;

Modification 21
Chapter III

III. establish and implement control systems on good practice *of* marketing *of* antimicrobial agents to ensure compliance with the evidence-based principles and guidelines on good practice for the management of communicable diseases within two years of the adoption of this Recommendation;

III. establish and implement control systems on good practice *for* marketing antimicrobial agents to ensure compliance with the ***in vitro and clinical*** evidence-based principles and guidelines on good practice for the management of communicable diseases within two years of the adoption of this Recommendation;

Modification 22
Chapter IV

IV. initiate with other Member States and the Commission activities aimed at harmonising and updating the product information (SPC) for antibacterial medicinal products *particularly related* to indications, dose and dose regimen *and prevalence of acquired resistance*;

IV. initiate with other Member States and the Commission activities aimed at harmonising and updating the product information (SPC) for antibacterial medicinal products *which have been subject to clinical and epidemiological studies and studies based solely on in vitro microbiological arguments, with particular reference* to indications, dose and dose regimen;

Modification 23
Chapter Va (new)

Va. propose without delay a global Community legislative framework for action against antimicrobial resistance, seeking as soon as possible to restrict or prohibit the use of antimicrobial agents and resistance genes in the veterinary and agri-foodstuffs sectors.

Modification 24
Paragraph 5

5. to keep matters covered by this Recommendation *under review*, with a view to its revision and updating, and submit an annual report to the Council on the basis of Member States' annual reports;

5. to keep *under review and coordinate* matters covered by this Recommendation under review, with a view to its revision and updating, and submit an annual report to the Council on the basis of Member States' annual reports;

Modification 25
Paragraph 6a (new)

6a. To strengthen the close cooperation between the Member States, the applicant countries and other parties concerned at international level in order to deal more effectively at international and intercontinental level with the spread of disease and antimicrobial resistance arising

*from the increase in international trade
and travel;*

Modification 26
Paragraph 6b (new)

***6b. To promote a global strategy in all the
relevant sectors: public health, veterinary
medicine and plant health.***

2. Instructs its President to forward this resolution to the Council and Commission.

EXPLANATORY STATEMENT

I. THE PROBLEM: THE EXPONENTIAL INCREASE OF BACTERIAL RESISTANCE TO ANTIMICROBIAL AGENTS

Antibiotics, accidentally discovered by Fleming (penicillin in 1928) and put on the market for the first time in 1941, revolutionised medicine. Most therapeutic drugs treat the symptoms rather than the causes of disease. Antibiotics are an exception as they allow a cure by attacking the pathogens. This does not, however, prevent recurrences.

Today antibiotics are the victims of their own success: misuse has allowed bacteria to develop resistance. That is the subject of this Commission communication and proposal for a recommendation.

The almost unavoidable corollary of the use of antibiotics is an increase in bacterial resistance; scientists were aware of this from a very early stage. Bacteria are intelligent organisms which mutate to survive and hence acquire tolerance and resistance to antibiotics¹. This means that a particular antibiotic will no longer work against a particular bacterium, on the fundamental principle of the evolution of living species in the presence of new environmental conditions.

Bacterial resistance to antibiotics is either:

- natural: bacteria naturally resist certain antibiotics (especially if they encounter an inappropriate antibiotic);
- acquired (by mutation or gene transfer): as the sensitive bacteria are destroyed, resistant bacteria have more space and nutrition to reproduce and multiply freely. As well as proliferating, resistant bacteria can transfer resistant genes to other bacteria which have never been exposed to the antibiotic in question. This resistance is either chromosomal or plasmidic².
Bacteria develop resistance to families of antibiotics, but a bacterium may become multiresistant (resistant to several families of antibiotics at the same time).

There seems to have been a speeding up in the last few years: an increase in the frequency of resistant bacteria and an increase in their multiresistance. Resistance now affects the entire population of bacteria and all families of antibiotics.

This has extremely serious implications in respect of health (treating human and animal infections), and financial cost to the community. Antibiotics lose their effectiveness and diseases which had apparently been overcome make a reappearance. In Paris one in every two cases of otitis no longer reacts to penicillin. The threat is even greater in the developing countries. The plague bacillus which up till now was sensitive to all antibiotics has a high risk of becoming resistant. In Thailand, the three main anti-malaria drugs are completely

¹ Bacteria adapt to their enemies to escape or even destroy them by changing the target of the antibiotic, making decoys, creating destructive enzymes or by an efflux system.

² Chromosomal resistance, i.e. within the gene of a bacteria, is transmissible to its descendants; plasmidic resistance, in the DNA, can be transmitted not only to its descendants but also to neighbouring bacteria including those of another species.

ineffective. In Asia 10% of strains of tuberculosis can resist the most powerful antibiotics. As these countries do not have the funds to use the most up-to-date and expensive antibiotics the scourge of resistance is aggravating what is already a precarious health situation.

The steep rise in resistance was long ignored, in particular by the medical profession. The drugs industry developed new antibiotics between 1950 and 1990 which gave the impression that this process would continue and that science would win. But today the microbes are catching up on us. The greater the resistance the more we prescribe new antibiotics which generate new forms of resistance; this is a vicious circle.

It is vital that we save what we can of the efficacy of the antibiotics we now have by restricting the propagation of new resistance in the various fields in which antibiotics are used. Reducing antibiotics consumption is a task for everyone: the medical and veterinary professions, the general public, patients, livestock and arable farmers etc. However, as in the case of global production phenomena, the risk of bacterial resistance has not yet been enough to cause changes in behaviour.

This recommendation relates to the use of antimicrobial agents in human medicine. The use of antibiotics in veterinary medicine, in animal feedstuffs and in plant health protection is not deemed relevant to this recommendation ... but it is relevant to public health.

II. THE REASONS FOR THE GROWTH OF RESISTANCE

At fault is the overconsumption of antibiotics in Europe and in the world and their widespread use. In addition to human and veterinary medicine (for therapeutic purposes) antibiotics are used as growth promoters in livestock farming and as plant protection agents and recently in GMOs.

The most recent data show that 10 493 tons of antibiotics were used in the EU in 1997, 52% in humans and 48% in animals (33% in veterinary medicine and 15% as growth promoters). Between 1991 and 1992 consumption increased by an average of 3.7% a year in the EU.

A. Human use of antibiotics

Antibiotics are used in humans principally for therapeutic purposes. The first cases of resistance to antibiotics occurred in hospitals (20% of prescriptions). Antibiotics are also used for preventive purposes (in surgery in particular to prevent the risk of infection). However, the effectiveness of automatic preventive treatment has now been questioned. Resistant infections have also appeared outside hospitals related to both the overconsumption of antibiotics and to courses of treatment which were either too short or too long and sometimes at the wrong dosage.

Taking antibiotics has become a knee-jerk reaction to infection, but is often unnecessary. For example, where the infection is of viral origin, antibiotics are pointless as they only work on bacteria. Antibiotics are, however, automatically prescribed on the grounds that 'you never know' or to 'prevent secondary infection' or to reassure the patient, even before the micro-organism responsible for the infection has been identified (now possible within 2 or 3 days). In the absence of any such diagnosis, doctors now prescribe stronger, more recent and broad

spectrum antibiotics. French and British GPs prescribe antibiotics in 94% of sore throat cases!

Even in the case of mild infections doctors prefer to prescribe antibiotics in order to avoid any complications and any possible health or legal complications. For if the illness gets worse and he did not prescribe antibiotics, he alone will have to bear the consequences of his decision, but if he gives a pointless antibiotic, his liability is blurred, although he has played his part in fostering antimicrobial resistance.

General practitioners are also under severe pressure. Patients often have a preconceived idea of the treatment they need if they have an infection, feel neglected if antibiotics are not prescribed and go to another doctor. Pharmaceutical laboratories influence the choice of drugs and often encourage over-prescription.

Failure to complete courses of antibiotics and poor hygiene also encourage the transmission of resistant bacteria. Patients do not always scrupulously follow prescriptions; they stop taking the drugs when they feel cured etc. Doses taken are often too low to affect a complete cure but enough to select resistant bacteria. Moreover, in some countries antibiotics are available over the counter without prescription, especially in the case of those for local use.

B. Use of antibiotics in animals

In livestock farming antibiotics are primarily used in veterinary medicine to treat existing infection or prevent possible infections. Some antibiotics are also used as animal feeding stuff additives; it has been noted that small quantities of antibiotics in feed produce weight gains of between 2 and 5% which allows the same quantity of meat to be produced from a smaller number of animals. In the forties and fifties the agri-foodstuffs industry therefore began to use antibiotics as a regular feed additive as growth promoters to increase productivity.

The use of antibiotics in livestock breeding is not, however, a guarantee of quality. On the contrary, they are often used to cover up for low hygiene and husbandry practices. In quality label and organic farming their use is strictly limited to therapeutic purposes. The overconsumption of antibiotics is therefore linked to intensive livestock farming. In Sweden, where antibiotics have been forbidden in animal feed, farmers' representatives believe that production costs have risen very little as a result, at least in the long-term, as the animals are healthier and more productive, while the fight to contain resistance has been considerably helped.

For the resistant bacteria in animals can be transmitted direct to human beings. The implications for the increase in resistance are all the more serious as with the loss of effectiveness of therapeutic solutions, drug companies and veterinarians have insisted on using new antibiotics intended for humans (such as fluoroquinolones in poultry farms in the US and Canada) to treat animal diseases. The effectiveness of antibiotics for human diseases has thereby been reduced and resistance has begun to appear in humans.

The health risk from the increased resistance in intensive livestock farming were revealed in the late sixties (UK Swann Committee) and highlighted by the WHO in 1977¹. The Commission has already banned the use of a number of antibiotics as growth promoters in animals. Some substances are however still permitted and must be dealt with by Community action within the global strategy for combating antimicrobial resistance.

C. Use of antibiotics in farming

For decades antibiotics have been used to protect crops (instead of chemical pesticides). Resistance in pathogenic bacteria affecting plants was noted from an early stage. As in the case of animals, this involves health risks associated with the development of resistant genes and their transfer to bacteria which are pathogenic to humans and animals. Some Member States have however banned the use of antibiotics for plant health protection. Community legislation would harmonise these measures and extend them to other countries.

Genetically modified plants have been appearing on the market in recent years, some of which in their genome contain an antibiotic resistant gene (called a marker) which allows the operation of transgenesis to be monitored. But these genes can migrate from plants to the bacteria in the animal or human digestive tract. Although biotechnology firms are now assuring us that they no longer use these resistant genes, they are still contained in half the transgenic plants which are being grown, on trial or in the process of authorisation.

The development of GMOs is therefore playing its part in the problem of bacterial resistance. Directive 2001/18/EC on the deliberate release of genetically modified organisms into the environment requires antibiotic resistance markers in GMOs which may have adverse effects on human health and the environment to be identified and phased out. This does not constitute a legal ban on these genes, which should be taken in hand immediately.

III. HOW CAN WE COMBAT ANTIMICROBIAL RESISTANCE?

The Commission's proposals are a step in the right direction, and propose restricting the consumption of antibiotics in human medicine by action at four levels:

- Strengthening systems for monitoring antimicrobial resistance and the consumption of antimicrobial agents
- applying control and prevention measures relating to the prudent use of antimicrobial agents
- promoting education and training for health professionals in the problem of antimicrobial resistance and
- informing the general public of the importance of the prudent use of antimicrobial agents.

Prescriptions must be issued after a genuine diagnosis rather than an assumption. The proposal for developing rapid diagnosis tests to identify bacterial species and to identify antibiotic resistance genes is very important so that better targeted antibiotics may be

¹ The massive use of antibiotics for fattening animals must be stopped immediately. It has led to the weakening of human beings towards infectious agents which have become resistant to antibiotics. Twenty years later the WHO announced that there was a direct link between the use of antibiotics in livestock rearing and the increase in antibiotic resistant strains contaminating humans.

prescribed. However, the sensitivity of resistance genes and bacteria to antibiotics has to be tested in both laboratory and real time conditions. Clinical experience is vital as doctors are treating patients not test tubes: the problem of resistance cannot be left to the microbiologists alone.

The increase of resistance can be contained if not controlled by prevention strategies, based in particular on individual and collective hygiene (elementary hygiene rules, washing of hands, isolation etc.,). On the other hand, the repeated references to vaccination in the document do not seem obviously relevant. If immunisation programmes are to be carried out rationally we also have to realise that there is resistance to vaccines and that their effectiveness is not always proven. Vaccines are not therefore a panacea or an alternative to antibiotics.

The influence of the pharmaceuticals industry over health professionals has to be kept a minimum as these firms have a commercial interest in selling antibiotics. Control of medical advertising in all forms to the medical profession is therefore needed. All medical training has to be independent of the drugs industry.

The Commission, under its global strategy for action against antimicrobial resistance must initiate a framework proposal for Community legislation to reduce or prohibit the consumption of antimicrobial agents in other fields (veterinary medicine, animal feedingstuffs, plant health protection) and resistance genes in GMOs.