

BACKGROUND

The 2011-2016 antibiotics plan has been launched at the European Day of awareness of proper use of antibiotics is November 18, 2011. It follows two previous plans (2001-2005 and 2007-2010) aimed to control and rationalize antibiotic prescribing.

The third plan is entitled "2011-2016 national alert on antibiotics plan". Behind this title stands a major public health threat: an increasing number of therapeutic situations of deadlock against bacterial infections, due to the development of bacterial resistance to antibiotics.

This threat requires a determined and sustained mobilization of all actors involved in the life cycle of antibiotics, in order to reconcile individual objectives (quality of care for patients) and group objectives (preservation of a precious and difficult to renew resource).

1 - OBJECTIVES OF THE THIRD ANTIBIOTIC PLAN

The third plan is a continuation of effective and recognized actions existing in the two previous plans, and includes a European and international dimension. Mobilization should be organized around a purpose: the right use of antibiotics.

The third plan stressed the need for good patient care: this requires that the professional has the tools to make the right choices, he must be trained to the specific aspects of bacterial infections, use of antibiotics and resistance phenomena, but also that the patient is satisfied by the professional approach and the proposed therapeutic solution.

It is also necessary to better understand the threats to antibiotics and to strengthen surveillance on consumption and resistance, at national, regional and local levels, by type of bacteria and antibiotics. This must be built in connection with the regional relays, the "Regional health agencies (ARS)", and will result in special contracts of objectives and resources between ARS with the state.

Finally, the promotion of research aim is to ensure continuous availability of a range of effective antibiotics, while limiting as much as possible the multiplication of situations that could lead to treatment impasses.

The third plan also carries new actions, and six points which can be highlighted.

1. A target to reduce antibiotic prescriptions

At the moment, a sustained reduction in overall consumption of antibiotics has established itself as a major issue of public health to reduce the overall selection pressure on the bacteria. An objective is set to reduce the antibiotic consumption for the duration of the plan: this decrease could be the order of 25% over five years to get closer to the average consumption level found in Europe. Achieving this objective must be the result of a strategy for right use of antibiotics.

2. The establishment of a network dedicated to the right use of antibiotics

This action aims to strengthen regional concept for consulting antibiotics through the formation of networks open to both health care facilities, in which the role of experts in antibiotics use will be reaffirmed, and ambulatory medicine. This structure's objective, established with the help of the ARS, is to complement the measures already initiated by the rules on the proper use of drugs and the management of adverse events associated with care. These tools will contribute to the sharing of information, resources and monitoring indicators for appropriate use of antibiotics.

3. The revision of the indicator on antibiotics in the hospital (ICATB)

This indicator already exists, and its focus is to know the means dedicated for the proper use of antibiotics in hospitals. It will be updated to take in account the actions recommended in the 2011-2016 plan antibiotics, including the facts that the nominative prescription of antibiotics must be widespread as the reassessment of antibiotic therapy in 48-72 hours.

4. The certification

Certification is a dynamic tool for improving the quality and safety of care implemented by health care facilities. It is important to use this tool to promote the right use of antibiotics. In this context, it is necessary to encourage the conduct of approaches to evaluation of professional practices in the field of antibiotic therapy.

5. The antibiotic prescriptions in general practice

One of the major challenges of the third plan is to improve antibiotic prescribing and use of antibiotics in community. This can be initiated through tools like the national convention of general practitioners and specialists, with the aim to encourage new practices and awareness. A quantitative indicator concerning antibiotics prescription has recently been defined: for the practitioner, the aim is 37 patients between 16 and 65 years treated with antibiotics among 100 patients, except long-term illnesses (at the moment, the average is 42 patients treated with antibiotics).

The use of rapid tests (TOD), strongly supported by the convention, also contributes to an appropriate use of antibiotics, avoiding unnecessary prescriptions including viral infections.

An important point is to identify antibiotics as "special drugs", which could benefit of a special status. This requires complex evolutions of legislative and regulatory developments.

6. The research

Research on antibiotics and bacterial resistance doesn't concerns only France. It is also European and international, as evidenced by initiatives such as the Transatlantic Task Force Europe / US (TATFAR) on antimicrobial resistance, and the joint programming initiative courses of antibiotic resistance in the field of health, under the responsibility of the Council of the European Union.

At the national level, initiatives in research on antibiotics and bacterial resistance will also be encouraged.

2 – THE IMPLEMENTATION OF THE PLAN

The plan has three strategic parts that include 21 actions:

- Part I: enhancing the effectiveness of the management of patients
- Part II: preserving the effectiveness of existing antibiotics,
- Part III: promote research.

Each action is divided itself into several sub-actions for which a pilot and partners are identified. To mobilize in order to save antibiotics must focus on different targets:

- The public, the patients and their families. It's necessary they understand that antibiotics do not cure all diseases and that their misuse could compromise their effectiveness when they are needed.
- The practitioners, in order to they use wisely the resources available.
- The healthcare facilities, in order to they structure their action, on one hand to use the resource properly, and other hand to control the spread of multi-resistant bacteria.
- The organizations that can contribute to making recommendations or advice to practitioners, and help for the prescription.
- The healthcare authorities responsible for defining and implementing programs for initial and continuing training of health professionals, and the content of the evaluation of professional practices.
- The researchers and pharmaceutical companies, particularly for the development of new antibiotics and for a better understanding of the phenomena of resistance;
- The experts who contribute to inform public of health decisions in the field of the use of antibiotics and the fight against bacterial resistance.
- The regional health agencies, responsible for driving the regional implementation plan and ensure the relentless pursuit of efforts.
- The Ministry of Health, responsible for the involvement of health authorities and coherence of fight against antimicrobial résistance, other ministries (Ministries of Agriculture, Education and Research) and operators on the field of health (national food safety agencies, and health insurance) for their expertise and their ability to bring key actions.

3 - THE IMPORTANCE FOR FRANCE TO ADOPT THE PLAN 2011-2016

France is still the front runners for the consumption of antibiotics: between 2000 and 2008, overall consumption of antibiotics in France decreased of 15 to 20% in community and 10 to 15% in the hospital. This decrease, however, must be qualified because France is still among the European countries that use the most antibiotics (third place in 2009, nearly three times more than the European countries with the lowest consumers), and bacterial resistance are most of the time higher than in the northern countries of Europe such as Denmark or Sweden.

In this context, the problems of antibiotic resistance are no longer confined as 10 years ago in the ICU, but are found in all parts of health facilities and in nursing homes.

In terms of evolution of bacterial resistance to antibiotics, the balance of actions of the plan to preserve the effectiveness of antibiotics is highlighted showing the successes and limits in town and in health facilities.

- Antibiotic resistance in some bacterial species has decrease significantly and consistently. This is the case in pneumococcus: 27% decreased susceptibility to penicillin and to erythromycin in 2009 for strains isolated from invasive infections (meningitis and bacteremia) against 48% and 53% in 2002. This is also the case with *Staphylococcus aureus* resistant to methicillin (MRSA): 23% in 2009 to the strains isolated from bloodstream infections against 33% in 2001. The success in this species is also associated with actions undertaken as part of the fight against nosocomial infections.
- Antibiotic resistance in other species increased. Thus, resistance to fluoroquinolones in *Campylobacter* is increasing steadily since 2004 (65% in 2008 vs. 42% in 2004 in *C. coli* and 42% vs 25% in *C. jejunii* for the same years). Resistance to ciprofloxacin in the gonococcus after several years of increase seems to stabilize around 40%. The increase in resistance is particularly worrying among Enterobacteriaceae. Resistance to 3rd generation cephalosporins (C3G) in *Escherichia coli* is increasing steadily since 2005 (7% in 2009 vs. 1% in 2005). The same trend is observed for *Klebsiella pneumoniae* with resistance to C3G percentage reached 19% in 2009. In addition to these resistances that the resistance to carbapenems if it remains low in France compared with other countries is rising sharply. The number of episodes involving Enterobacteriaceae producing carbapenemases (EPC) was 1 to 3 episodes of 2004-2008 and six in 2009 and 27 in the first six months of 2011 (balance sheet at June 23, 2011). The reports involving *Acinetobacter baumannii* resistant to imipenem are also increasing (22 reports received by the InVS in 2004 against 50 in 2009 and 68 in 2010, trial balance).

Considering these elements, the preservation of antibiotics is a major public health issue that is now a part of a broader framework: antibiotic consumption in animal and environmental topics must also be taken in account.
