SURVEILLANCE OF ANTIBIOTIC USE AND RESISTANCE IN EUROPE

The entrance to the Palacio de Exposiciones y Congresos in Seville

Optimising the use of anti-infective agents was the theme of the 9th congress of the European Association of Hospital Pharmacists, which took place in Seville, Spain, from 17–19 March. Gareth Jones reports

Health ministers of the enlarged European Union and the European Commission will be looking to pharmacists to be important partners in containing the problem of antimicrobial resistance. This was the conclusion of a statement read to the congress from Dr Fernand Sauer, director of public health and risk assessment, Health and Consumer Protection Directorate-General (DG SANCO), on behalf of the European Commission. Hospital pharmacists play a key role in ensuring the prudent use of antimicrobials in the hospital, he said. "Information on the antimicrobial usage in hospitals is in your hands, and is critical in understanding and assessing the use and misuse of these drugs. This information needs to be shared in order to come to effective interventions to control inappropriate use. I believe that you should be closely involved in any collaborative approach to share information on antimicrobial usage," he added.

This theme was taken up by the keynote speaker, Dominique Monnet, Statens Serum Institut, Copenhagen, Denmark. He said that hospital pharmacists have a key role in implementing the recommendations of the European policy on the prudent use of antimicrobials.

An example of one of the issues being faced is the incidence of erythromycin-resistant *Streptococcus pneumoniae* from community-acquired respiratory tract infections, which is high in southern Europe and low in northern Europe. The most important factor in this difference is the lower consumption of macrolide antiobiotics in northern Europe. A clear link has been confirmed between high antibiotic use and resistance.

Mr Jones is editor of Hospital Pharmacist

Scientific experts, public health officials and representatives from national and international organisations met in Copenhagen in September 1998 for the European Union Conference on Microbial Threat. Dr Monnet reviewed the progress to date with the policies proposed at this meeting.

The first recommendation of the Copenhagen meeting was that the European Union and member states must recognise that antimicrobial resistance is a major European and global problem. Many conferences have subsequently tackled this issue, and strategies have been developed for surveillance, prevention, research, product development and international co-operation.

A recommendation was made that EU and member states should setup a surveillance system to monitor antimicrobial resistance. The European Antimicrobial Resistance Surveillance System (EARSS) has been established, and is now the main publicly funded system in Europe (see panel, p164).

In the past, the only way to obtain consumption data for antimicrobials was to purchase it from commercial sources. The Copenhagen recommendations called on the EU and member states to collect and make available antimicrobial consumption data. This is achieved through the European Surveillance of Antibiotic Consumption (ESAC) project (see panel, p164).

In European Union and applicant countries, it is officially impossible to acquire antimicrobials without a prescription. The "Eurobarometer" survey 2002, however, shows that particularly in Spain and Greece, many patients are using antimicrobials without a prescription. It was recommended in the Copenhagen conference that anti-microbials should only be available by prescription.

With resistance building to many of the currently available antibiotics, there is a need to develop new ones. Many companies have stopped or reduced antimicrobial drug discovery for reasons including increased regulation requirements, demand for low prices by health systems, low perceived market size and the fact that most profits are derived from blockbusters. Dr Monnet suggested that economic incentives should be offered to encourage companies to develop new antibiotics.

The EU and member states should make antimicrobial resistance a high priority. An example is the ABC calculator, which can be used to compare antimicrobial consumption data with other hospitals. (It is downloadable, by following the link **www.pjonline.com/links/hp)**

The Copenhagen recommendations also called for national strategies to promote prudent use of antibiotics. The UK is one country which has succeeded in this area, but many have not, particularly in southern Europe.

The Copenhagen recommendations finally stated that a way should be found to review progress. The European Commission recommended a report within two years, but this requirement is not obligatory.

The implementation of antimicrobial policies varies a lot among countries and there is a lack of political support for implementing national strategies. There is also a lack of resources, with no money passing from the EARSS and ESAC systems to participating countries that provide data. The strategy is still poor in the area of infection control. Dr Monnet called on the European Centre for Disease Prevention and Control to take up the issues of drug resistance and hospital infection.

ESAC

- The European Surveillance of Antibiotic Consumption (ESAC) project was officially launched in 2001.
- The ESAC project is a DG SANCO funded monitoring programme which aims to collect standardised, harmonised and comparable data on antibiotic consumption.
- The ESAC project aims to develop a data collection system to allow production of comprehensive national data on the volume of antibiotic consumption. Standardised national data will be assembled in a European database for regional comparison of antibiotic use in relation to antibiotic resistance patterns and socio-economic and general health parameters.
- The goal of ESAC is to document variations in antibiotic consumption and translate them into quality indicators for public health monitoring.

EARSS

- The European Antimicrobial Resistance Surveillance System (EARSS), funded by DG SANCO, is an international network of national surveillance systems which was launched in 1998. The aim is to collect comparable and reliable antimicrobial resistance data for public health action.
- EARSS monitors resistance to invasive infections of:
  Streptococcus pneumoniae
  Staphylococcus aureus
  Escherichia coli
  Enterococcus faecium/faecalis.
- EARSS gives electronic feedback, providing basic data to stimulate specific studies.
- By January 2003, more than 600 microbiological laboratories from 28 countries had participated.

Integrated care pathways improve quality

Integration and a fundamental redesign of the organisation of health care is required if services are to provide the highest levels of quality. This was the theme of a presentation by Marc Berg, professor of social-medical sciences, Institute of Health Policy and Management, Erasmus University, Rotterdam, The Netherlands. He said that health care lacks a strong culture of self-criticism, and is not equipped to deliver the quality of care that consumers are increasingly demanding.

The Institute of Medicine in the US published a report a few years ago on the "quality chasm" in health care. It concluded that there is a large gap between what the health care system could deliver, and what it actually delivers. A further report by the Institute of Medicine concluded that 2.9–3.7 per cent of all hospital admissions in the US are as a result of medical error or omissions.

Although a link between the cost of a health system, and quality outcomes might be expected, no such link exists, which implies that while a lot of money is being spent in some health systems, it is not being directed toward quality or safety.

An example of the lack of quality in health systems is demonstrated, in pharmacy, when no single health care professional has routine access to an integrated and accurate medication record for a patient, said Professor Berg. In fact, studies have shown that only 30 per cent of hospital and GP medication records are in agreement.

Health care systems must address this quality chasm now, said Professor Berg. In the next couple of years, the health systems will be under increased pressure from more patients with chronic disease, greater patient empowerment and the demands of accountability.

Health care systems are currently organised with "one-step logistics". This means, for example, that a patient will see a specialist and then wait for tests, and possibly wait again to be seen by the specialist. Improved health care systems can be built around standardised care trajectories. These are agreed plans for the investigation and treatment of a particular patient group. For example, a standardised care trajectory could define all the tests, counselling and treatment that would be offered to a patient with diabetes. The processes could run concurrently, which would reduce waiting time for patients.

Professor Berg said that people may be concerned that standardising processes does not account for the fact that all patients are individuals, with different problems. However, it has been found that 80 per cent of health care interventions can be standardised for 80 per cent of patients. There is also concern that standardisation takes away the opportunity for professional input for the health care professionals involved. He suggested that the opposite is true, since health care professionals would still be called upon at each stage to decide if it was appropriate for the patient to follow the standard pathway of care. Additionally, standard pathways remove a lot of the bureaucratic burden from health care professionals, for example, they do not have to take time to fill in forms ordering tests for every patient.

Health professionals have been writing clinical guidelines for many years, but too often they are left to gather dust on the shelf. Standardised pathways of care could overcome this problem, because the guidelines can be embedded into the design of the care pathway.

Better planned pathways also facilitate the delegation of certain tasks. Delegation can only be considered when the roles and responsibilities are outlined precisely. There is clear evidence that when nurses become more involved in counselling patients and providing information, health outcomes increase. Therefore, delegation of certain tasks can improve both the efficiency and effectiveness of the delivery of the health care.

There is a relationship between occupation rate of any service, eg, dispensing a prescription, and waiting time. When the occupation rate of the service reaches 75 per cent, there is an exponential increase in the waiting time. The only way to solve this problem is to build over-capacity, but this is difficult to achieve when resources are scarce. Using an analogy from the aviation industry, Professor Berg said that no plane would ever leave the ground if a landing slot had not already been assigned. Patients, however, are often taken into a health care system without there being any plan as to how they will move through it.

For IT to be truly effective, standardised procedures must be in place. In fact, care trajectories can only work effectively with IT. Professor Berg also said that it is important not to order an unnecessarily complex computer system. Sights are often set too high, and organisations without any IT process infrastructure were moving straight to the most complex systems which included inter-organisation agreements and prescribing decision support. He suggested that organisations should look first to obtain a system that recorded medication records, and then a system that allowed electronic prescribing, before moving to the more complex systems.

A final element of the system is ensuring that health care professionals have feedback on the work they are doing, and derive professional satisfaction from this.

This integrated plan for health care is a vision for the future. In many countries, these processes are far removed from everyday practice. Professor Berg called on health care professionals to commit to changing their working processes, and to have the courage to question their traditional ways of working.

EAHP 2005

The 10th congress of the European Association of Hospital Pharmacists will be held at the Congress Centre, Lisbon, Portugal, from the 16–18 March 2005. This title of the congress is "Hospital pharmacy and economy".