

SHORT SUMMARY OF SWEDRES 2008, A REPORT ON ANTIMICROBIAL UTILISATION AND RESISTANCE IN HUMANS IN SWEDEN

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Strama (the Swedish Strategic Programme against Antibiotic Resistance) and the Swedish Institute for Infectious Disease Control (SMI) launched the seventh report on the use of antibiotics and resistance in human medicine in Sweden, Swedres 2008, on 10 June 2009 [1]. The report published jointly in conjunction with a similar veterinary report from the National Veterinary Institute (Svarm), shows a 1.6 % decrease in sales of antibiotics in Sweden compared with 2007, whereas from 2004 to 2007 there had been a continued slight increase. Swedres 2008 highlights a number of areas that require particular attention and further investigation such as the high antibiotic pressure and poor compliance to guidelines for the antibiotic treatment of the elderly and a considerable spread of vancomycin-resistant enterococci (VRE) over several Swedish counties, mainly affecting the elderly.

Use of antibiotics

Sales data are obtained from the National corporation of Swedish pharmacies. The use of antibiotics in Sweden is highest among the elderly and children with prescription rates varying considerably between different parts of the country. The fraction of children aged 0-6 years treated with at least one course of antibiotics ranges from 38 per cent in Stockholm county to 25 per cent in Västerbotten county, with a national average of 33 percent. The corresponding number among the group of people over 80 years of age was 36 % but this figure is likely to be an underestimate, as the prescription of antibiotics in hospitals and care homes frequently are not registered according to age. In this respect it is important to note that the elderly are particularly at risk concerning severe side effects of antibiotics, such as *Clostridium difficile* infections.

The use of antibiotics in hospital care seems to be changing in a desirable way, with broad spectrum antibiotics being replaced by narrow spectrum substances. Various types of penicillins have increased and the use of cephalosporins and fluoroquinolones is decreasing.

This is in accordance with the guidelines on the reduction of prescription of fluoroquinolones against lower urinary tract infections in women, a subject of information campaigns aimed at health professionals for several years [2]. The decrease in the use of cephalosporins in hospitals is remarkable as Sweden has a long tradition of extensive use of cephalosporins. To use less fluoroquinolones and cephalosporins is a recommendation in the antibiotic policy to reduce the risk for selection and spread of

extended-spectrum beta-lactamases (ESBL) containing bacteria in hospitals [3].

Use of antifungals

The total use of antifungals for hospital in-patients remains practically unchanged from 2007 to 2008. The use of amphotericin B increased whereas the use of fluconazole decreased a little in 2008 after several years of steep increases. However, fluconazole still represents 80 % of the total antifungal drugs used for in-patients.

Antibiotic resistance

Four types of antibiotic resistance are mandatorily notifiable according to the Swedish Communicable Diseases Act. The major part of data on antibiotic resistance in Sweden, however, is gathered by the voluntary reporting by Swedish clinical microbiology laboratories via the annual resistance surveillance and quality control (RSQC) programme. Three quarters of the labs also supply data on defined invasive isolates to the European Antimicrobial Resistance Surveillance System (EARSS) network database.

The major trends in 2008 were an increase of notifiable ESBL-strains by almost 30 %, 2,957 cases, compared to 2007. On the positive side was that the transmission of methicillin resistant *Staphylococcus aureus* (MRSA) in the health-care sector seems to have stabilized, 1 307 cases, probably due to extensive case-finding and promotion of compliance to basal hygiene principles.

Other resistances covered in the report are *Streptococcus pneumoniae* and *pyogenes*, *Enterococcus faecium* and *faecalis*, *Haemophilus influenzae*, *Klebsiella pneumoniae*, *Escherichia coli*, *Helicobacter pylori*, *Campylobacter jejuni/coli*, *Neisseria gonorrhoeae*, and *Mycobacterium tuberculosis*.

References

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