

Annual Report 2009

Strama's remit and organisation

Strama's objective is to promote transdisciplinary collaboration in the effort to safeguard the availability of effective antibiotics in human and veterinary bacterial infections, and to initiate measures that primarily affect human health.

Strama's board sets the budget and formulates the business plan. The base for Strama's national activities consists of a coordinating office located in the premises of the Swedish Institute for Infectious Disease Control. The office has 5.1 whole-time-equivalent posts: 0.8 doctors, 2.0 pharmacists and 2.3 in project management and administration. Strama's activities are organised and carried out by a management committee of national experts, working alongside local county-organised Strama groups. In December 2009 there were a total of thirty local Strama groups. A number of these have been allocated tasks and funding from the relevant county council, but most remain unfunded.

Referrals and responses

Strama has been asked to comment on the following documents from the Swedish National Board of Health and Welfare: MRSA in Nursery Schools, Recommendations for Assessment of MRSA Carrier Status and Infectivity and Access to Healthcare Hygiene Expertise. A statement was also made on the final report of the Patient Data Inquiry – *Patient Data and Pharmaceuticals etc.* Strama has also commented on the report of the Communicable Disease Control Inquiry. In its comment on the Pharmaceutical Package – a proposal for new pharmaceutical legislation from the European Commission (S2008/10685/HS), Strama expressed concern that distinction between public information and advertising could become blurred, and suggested that legislation should be more explicit.

Interdisciplinary coordination

Authorities

In 2009, Strama had four meetings with the National Board of Health and Welfare, the Swedish Institute for Infectious Disease Control (SMI) and the Swedish Association of Local Authorities and Regions (SALAR). Strama and the Swedish Medical Products Agency have met on two occasions to discuss common issues. Strama also has a close collaboration with the Antibiotic Resistance Group of the Swedish Institute for Infectious Disease Control.

Strama worked hard to make sure that good access to pharmaceutical statistics was retained, ahead of the re-regulation of the pharmacy market which came into force on 1st July 2009. Together with the Swedish National Board of Health and Welfare, contact was made with the CEO of Apotekens Service AB as well as the responsible official at the Ministry of Health and Social Affairs. At these meetings, Strama emphasised the importance of good access to pharmaceutical statistics for continuous national monitoring and analysis.

Strama has also been in regular contact with Strama VL (Veterinary and Food).

Organisations

In its contacts with SALAR, Strama has emphasised the need to recognise the role of, and to provide funding for the local Strama groups. Strama also has a continuous exchange of information with the chairmen of the local groups.

Attending the meetings of the Antibiotics Reference Group is one of the ways in which members of Strama's management committee can make contact and collaborate with other professional organisations. Collaboration with the dental profession continued during the year, and the results included the publication of academic papers.

Antibiotic consumption

Treatment in the community

There was a clear reduction in prescription sales of antibiotics in 2009 compared with the two preceding years. This reduction was seen in all counties and was most evident in those antibiotics used in respiratory tract infections. The most pronounced reduction was seen in the 0-4 yr age group, in which the reduction was 17%. The use of resistance-inducing broad spectrum agents in adult women continued to fall, indicating a more sustainable use of antibiotics in uncomplicated lower urinary tract infection.

Strama launched three national targets for primary care/outpatient antibiotic prescribing on November 18th – European Antibiotic Awareness Day. These are:

The total amount of antibiotic prescribing in primary/outpatient care should not exceed 250 prescriptions per 1000 population per annum. This target is based on figures derived from diagnosis/prescribing studies. There is currently great regional variation that can not be explained by variations in illness rates.

80% of antibiotic prescriptions for respiratory tract infection in children aged 0-6 should be for penicillin-V.

No more than 10% of antibiotic prescriptions for urinary tract infection in women aged 18-79 should be for quinolones.

These targets were launched on the Strama web site and with a press release that generated 58 different articles and media reports.

Hospital care

The trend of falling secondary care sales of broad-spectrum cephalosporins and quinolones continues. This pattern can be seen in nearly all counties.

Resistance

Strama also monitors resistance patterns in a collaboration with ARG – the Antibiotic Resistance Group of the Swedish Institute for Infectious Disease Control. The broad implications of current resistance patterns and antibiotic consumption were discussed at a joint meeting of Strama's analysis group and ARG. Preliminary data for notifiable bacterial infections showed a sharp rise in ESBL, reaching a total of 3 765 cases in 2009. All counties bar one recorded a rise compared with 2008. A small total increase was seen in MRSA, with six counties recording no change or a reduction compared to 2008.

Strama's remit according to its directive

The following is a concise account of Strama's activities in 2009 in relation to the areas defined by its directive.

Strama shall, based upon the national and international monitoring and analysis of the prevalence of antibiotic resistance and consumption, actively promote measures that primarily affect human health.

Expert meeting on skin and soft-tissue infections

In 2008, Strama and the Swedish Medical Products Agency arranged an expert meeting on the pharmacological treatment of bacterial skin and soft-tissue infections. The aim of this review was to establish the best treatment in a substantial number of diagnoses, and new guidelines were presented in the autumn of 2009.

Strama shall actively promote research into issues related to antibiotic resistance where the need for new knowledge has been identified.

The consequences of antibiotic resistance

In 2009 Strama sent out a questionnaire to all the Strama group chairmen nationwide, with the aim of quantifying the extra healthcare burden caused by resistant bacteria. The responses were unequivocal and indicated that it is virtually impossible to measure this extra burden of morbidity using currently existing quality assurance systems, but that there was a clear need to do so as all the respondents knew of patients whose hospital stay had been prolonged as a result of bacterial resistance. Strama is therefore going to arrange a method seminar in the spring of 2010 to try to determine the best way of obtaining an accurate picture of the extra healthcare burden caused by resistant bacteria in increased mortality, morbidity and financial costs.

A study of postoperative infections

In collaboration with partners that included the National Board of Health and Welfare's Epidemiology Centre, work has continued on the study of postoperative infection as an indication for antibiotics. For this study, data on inguinal herniorrhaphy patients has been extracted from the patient database. Antibiotic use in these patients has then been evaluated with the aid of data from the Pharmaceutical Database. The increased risk of being prescribed antibiotics in the first postoperative month was then compared with the incidence of infection reported to the Swedish Hernia Database. The figures are comparable and the method is thought to work well. This study was presented at an international congress in September 2009.

Clinical trials

Strama's clinical trial, *A comparison of one and two weeks' ciprofloxacin treatment of acute pyelonephritis in women* was completed in early 2009. The data was then entered and analysed. A concluding investigators' meeting was held in Stockholm in September where the preliminary results were disclosed. The study reached its target number of included subjects, and provided answers to the question of treatment duration. The final report is currently being prepared for the Swedish Medical Products Agency.

Point prevalence study

Strama has carried out four point prevalence studies (PPS), the most recent in 2008. The results were presented this year in the form of a Strama report. The data collection was done at the same time as SALAR's second data collection of healthcare-associated infections (PPM VRI HT 08). This made it possible to validate both sets of data, which were, in part, done in different ways. The results with regard to the percentage of antibiotic-treated patients and the prevalence of HAI hardly differed – 9.9% and 9.7% respectively. The results were presented at a symposium at the Swedish Annual Medical Congress 2009, at the Swedish Surgical Society's *Surgery Week*, and jointly with the presentation of SALAR's PPS HAI assessment. Strama is also taking part in the ECDC's preparatory meetings aimed at devising a protocol for a new European PPS.

SALAR PPM HAI

Using its experience with its own point prevalence measurements, Strama has taken part in SALAR's working group for PPM HAI measurements. Two large surveys were carried out in 2009, which included about 95% of all inpatients in somatic secondary care. These brought to a close the official Patient Safety Campaign of 2008 and 2009. During this two-year period, the prevalence of healthcare-associated infections in secondary somatic care fell from 11.3% to 8.9%. These measurements have encouraged several county councils to carry out their own monthly surveys. These simultaneous surveys will also be carried out on two separate occasions in 2010.

ICU-Strama

ICU-Strama's collaboration with the Swedish ICU register (SIR) has made it possible to complement SIR's complications database with microbiological data. A web-based service was developed during the year, and its widespread adoption has commenced. It is now possible to quantify the mortality associated with e.g. community-acquired sepsis, hospital-acquired sepsis and ventilator-associated pneumonia and relate it to the different causative agents and antibiotic resistance. The data was

presented at SIR's spring meeting and on its web site. In 2009, ICU-Strama collated and validated aggregated Swedish ICU antibiotic consumption data for the period 1999-2008.

Strama shall collate and actively disseminate information relating to antibiotic resistance to stakeholders in healthcare and local authority care, as well as to decision-makers in public authorities, the general public and the media.

New guidelines campaign

Strama organised a campaign to disseminate information about the new treatment guidelines for lower respiratory tract infections. A card describing the main elements has been produced to provide doctors with clear-cut and easily-accessible information. The card has been sent to all primary care centres, paediatric clinics, casualty departments, paediatricians and Strama groups as well as being distributed at the Swedish Annual Medical Congress. The cards were also distributed with the journal of the Swedish Medical Products Agency to its 60 000 subscribers. The guidelines were also discussed in a debate article in the Journal of the Swedish Medical Association, under the title of *Doxycycline is not a cough remedy – reduce antibiotic treatment in acute bronchitis*. The debate article was published alongside an academic paper that supported the thinking behind the recommendations and summarised the most important conclusions of the workshop.

Media

The media represent an important target group and channel in the fight to increase awareness about antibiotic resistance in a variety of social groups. During the year, Strama has taken the initiative and collaborated in the publication of seven debate articles in national newspapers and forums of debate. Nine press releases were issued, some in collaboration with other bodies. Strama's spokespersons have contributed to several articles and interviews in the Swedish and international media. Approximately 450 articles about, or statements from Strama have appeared in the media during 2009. On its own page in *Smittskydd*, the journal of the Swedish Institute for Infectious Disease Control, Strama has published, referenced and reported on a variety of current Strama activities. Six issues of the journal were published during the year.

Films

A film about antibiotic resistance was shown in all the cinemas of the SF national cinema group on European Antibiotic Awareness Day in November. The aim of the film was to increase public awareness of antibiotic resistance and to get the message across that ordinary infections resolve without antibiotics, thereby reducing unnecessary antibiotic use. The film was shown for a week and was seen by 350 000 cinema-goers. Swedish Television's public message board showed the film for several weeks. In addition to this, Strama and the Swedish Institute for Infectious Disease Control have commissioned a short film about the problem of resistance.

Web site

Strama's web site, www.strama.se, is a vital communication tool. The number of hits is increasing every year. The web site has had around 48 500 visits from 27 000 separate visitors. The web site contains news, events, articles and statistics relating to antibiotic sales. Fifty-eight news items were presented on the site in 2009. Strama continuously sends out electronic newsletters to about 2 500 subscribers. The web site is also an important means of disseminating information material such as teaching materials and information leaflets. All presentations from meetings, seminars and congresses are also available for viewing or download.

Reports

Several scientific articles have been published in the Swedish and international press.

Strama is in the final phase of putting together a document on MRSA in the community. The background material for the document is the result of an expert meeting arranged by the Swedish

National Board of Health and Welfare that Strama was asked to summarise. The text has been updated and complemented and will be launched alongside the Swedish National Board of Health and Welfare's knowledge base on MRSA in nursery schools.

For the ninth successive year, Strama has, in collaboration with the Swedish Institute for Infectious Disease Control, put together the Swedres report on antibiotic consumption and resistance patterns in Sweden. This report has been printed and distributed free of charge within the health service.

Global surveillance and Strama-nytt (Strama's newsletter)

Topical and interesting research reports are covered by the electronic newsletter *Strama-nytt* (Strama-news). These reports are selected out by a continuous process of monitoring a large number of international scientific journals as well as news media. Nine issues of *Strama-nytt* were released in 2009 and distributed to just over 1000 subscribers. A list of relevant references is regularly released through a newsletter which is distributed nationally and internationally.

Educational activities and conferences

For the thirteenth successive year, a Strama day was arranged for members of the local Strama groups. One hundred and twenty people took part.

On the 6th of October, Strama, the Swedish Association of Local Authorities and Regions, the Swedish National Board of Health and Welfare, the Swedish Institute for Infectious Disease Control and the Örebro communicable disease unit jointly arranged a theme day entitled "Healthier children in nursery school". The aim was to pull together the various professional groups involved in caring for pre-school children to discuss how best to manage infections and their transmission. Representatives from child care, the health service, public health and environmental health sat on the panel. 240 people took part in the meeting which will be held again in other parts of the country during 2010.

Strama had a stand at the Swedish Annual Medical Congress where educational material was distributed and participants were informed about Strama and antibiotic use in Sweden. Visual presentations of two different Strama projects, two short films that Strama had produced during the year, a poster showing Strama's newly developed targets for community hospital antibiotic prescribing, and a poster showing the new guidelines on the management of skin and soft tissue infection in primary care could be seen at the stand. A symposium was also held, under the title *The Management of Skin and Soft Tissue Infection in Primary Care*. A further symposium with a clear link to Strama was also held at the same congress. Strama also took part in the Foundation Doctors' Congress held on April 2-3, which was attended by about 550 foundation year 1 and 2 doctors.

Two all-day training sessions were held in Uppsala on February 25th and 26th for telephone triage nurses. It was entitled *Resistance and the value of antibiotics – infection assessment and advice in primary care*. Nearly 200 nurses attended. The training was jointly arranged by Strama, Sjukvårdsrådgivningen 1177 (the national 24-hour healthcare advice call centre), and the Uppsala primary care R&D unit.

Strama launched three national targets for primary care/outpatient antibiotic prescribing on European Antibiotic Awareness Day. In addition to this, a Swedish version of the ECDC-produced web film of a sneezing panda was shown. Strama's chairman was invited to speak at the seminar arranged by the ECDC (European Centre for Disease Prevention and Control).

Strama's chairman was also invited to speak on *Antibiotics – individual benefit and collective risk* at the annual congress of the Swedish Academy of Pharmaceutical Sciences, where he was awarded the Swedish Academy of Pharmaceutical Sciences prize.

During the Almedalen Week, the Swedish Medical Association arranged a seminar to discuss the work being done to prevent healthcare-associated infection and the spread of antibiotic-resistant bacteria. Strama's chairman was a guest speaker at the seminar.

Strama shall work for the practical implementation of knowledge gained in the field of antibiotic resistance by changing the attitude and behaviour of prescribers, other relevant professional groups and the general public.

Educational material

Strama has developed a variety of patient education material on respiratory tract infections. These include a patient leaflet discussing the symptoms, the natural course and the warning signs of more serious infection. It is intended as an aid in patient communication. Respiratory tract infections are among the commonest health problems in preschool children. Strama has therefore summarised the results of recent research on the management of common respiratory tract infections in preschool children. This has led to the publication of two documents, a short version aimed at providing a quick overview for doctors and nurses, and a more comprehensive background document that includes references. Both documents have been distributed to every primary care centre in the country, along with an information poster about chesty coughs.

Knowledge base

Strama has given a grant to the Swedish Association for Infection Control for their work in developing a national strategy and protocols for the handling of hypodermic needles in dental care.

Strama shall work for the development of programmes of action at regional and local levels with concrete aims, measures and audit methods adapted for practical implementation.

Creation of a database for monitoring the management of infections in primary care

To establish the optimal level of prescribing for the health of the population as a whole, we need to know why antibiotics are prescribed. This would also make it possible to determine whether prescribing follows Swedish guidelines for the management of common infections in primary/outpatient care, and to identify the areas in which prescribers and the general public need more information. And so for several years, Strama has supported the development of RAVE, a module that can be integrated into the existing electronic patient record and which can provide the necessary follow-up information. About 150 primary care centres currently have access to RAVE, and data can be continuously analysed. There are ongoing discussions with SALAR about the possibility of refashioning RAVE into a permanent quality assurance system for primary care.

Secondary care registration systems

A system for registering healthcare-associated infections and antibiotic use in secondary care has been developed with the support of Strama and others. The system has been tested live at Southern Älvsborg Hospital with excellent results as regards meeting performance targets and user acceptance. The Strama groups in Västra Götaland find this support system very easy to use and extremely useful, providing real-time information, feedback and antibiotic prescribing support in hospitals. It could be used in the future to implement specific measures to reduce the spread of antibiotic-resistant bacteria. Several county councils have shown great interest in implementing this system, and Strama, together with public health representatives from Västra Götaland, is therefore in discussions with SALAR about how this could be done.

Strama shall allocate and administer the funds it receives from central government for measures needed to fulfil the tasks that the strategy group has been set by this ordinance, and to monitor organisations that have received state funding.

Local Strama groups have been given the opportunity to seek funding for local projects. 525 000 SEK was allocated in 2009 to the following projects:

- A case-control study to evaluate the risk factors and antibiotic treatments in patients in a cluster of Clostridium difficile-associated diarrhoea (CDAD) caused by moxifloxacin-resistant PCR ribotype SE37. Stockholm Strama group – “Clustering of ESBL-producing gut bacteria in a health service unit – how do we know if we have an outbreak?”
- Returning travellers study South-West Sweden – Phase 2: How long does ESBL carrier status persist following foreign travel, and what factors affect the duration?
- *K. pneumoniae* carrier status in children cared for on a neonatal unit.
- Information campaign – Staying healthy without antibiotics 2009-2010.
- RCT (randomised controlled trial) to evaluate the effect of antibiotic treatment in elderly people with bacteriuria and non-specific symptoms.
- Antibiotic treatment of children with upper respiratory tract infections – a primary care intervention study.
- Treatment of respiratory tract infections in primary health care in relation to age and the use of rapid diagnostic tests – a follow-up study over six years.

Strama shall be active internationally in the field of antibiotic resistance.

The Swedish EU presidency

The Swedish EU presidency has seen a continuation of the commitment shown by the three preceding countries in the problem of antibiotic resistance. Strama’s chairman has played a crucial expert role in the whole process. Sweden decided to arrange an experts’ conference to discuss which incentives could promote the development of new antibiotics. In collaboration with the global ReAct network, the European Medicines Agency (EMA) and the European Centre for Disease Prevention and Control (ECDC) had produced a joint background report entitled *The bacterial challenge – time to react*. The conference was jointly arranged with Strama and other bodies. The conclusions of the conference form the basis of the recommendations made by the health ministers of the EU at a meeting of the Employment, Social Policy, Health and Consumer Affairs Council (EPSCO) last December. Sweden also brought up the issue of antibiotic resistance at the EU-US summit in November, where agreement was reached to establish a transatlantic working group on urgent matters related to antibiotic resistance.

In collaboration with the Ministry of Health and Social Affairs, Karolinska Institutet and Global Health Europe arranged a conference on global health. Strama’s chairman was also invited to speak at this meeting.

China

The Swedish delegation that under the leadership of Maria Larsson, Minister for Elderly Care and Public Health met with representatives of the Chinese government in Beijing included several members of Strama’s management committee. At this meeting it was decided that Sweden and China would act together in meeting the challenges of the globally increasing problem of resistant bacteria. A delegation of Chinese experts is to visit Strama in 2010.

India

A memorandum of understanding that includes antimicrobial resistance was signed by India and Sweden in 2009. Antibiotic resistance is to be one of six main themes of the Indo-Sweden Health Week starting in early 2010. One of Strama's management committee members will be taking part in the meeting.

ESAC

Strama is taking part in the European Surveillance of Antimicrobial Consumption project (ESAC), and its sub-projects in hospital and ambulatory care. Requested antibiotic surveillance data is provided annually to the project coordinators.

Care-ICU

Strama's involvement in the Care-ICU EU project continues, and during the year ICU-Strama has coordinated a point prevalence study of Swedish ICUs, comparing patient risk factors in low-resistance and high-resistance countries. The data are to be presented at an international congress in March 2010.

Scottish fact-finding visit

A group from Health Protection Scotland and the Scottish Information Services Division visited Strama in October. The group is working to establish a national system for monitoring antibiotic consumption and resistance in Scotland and wanted to find out more about the Swedish Strama model.

Russia

Responding to an invitation from the Russian national centre for monitoring antibiotic resistance, a Strama representative gave a lecture on antibiotic resistance and the Swedish countermeasure model at a large Russian antibiotic conference in Omsk attended by 1 623 delegates, mostly doctors. This was followed by a similar event in Khabarovsk.

ReAct

Strama has been an important collaboration partner for the international network ReAct, which since its inception in 2005 has been supported by SIDA, the Swedish International Development Cooperation Agency.



Otto Cars
Chairman of Strama