

S A R I



The Strategy for the Control of
Antimicrobial Resistance in Ireland

Annual Report 2006

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Hospital Infection Society Third Prevalence Survey of Healthcare-associated Infection.

Report of the 3rd Joint Conference of the Antimicrobial Resistance Action Plan/Strategy for the control of Antimicrobial Resistance in Ireland, November 2006, Dublin.

1. Executive Summary

The strategy for the Control of Antimicrobial Resistance in Ireland (SARI) was launched by the Minister for Health and Children in April 2001. Although the intervening years has seen some progress in its implementation, much work remains to be done. While efforts at local level to improve antimicrobial prescribing and to reduce healthcare-associated infection continue, it had often appeared as if SARI was not a national priority, as has been highlighted in previous reports.

During 2006, there was much discussion between the various components of SARI and the Health Services Executive (HSE) in establishing a governance framework under which progress could be accelerated, and progress was made in establishing such a framework towards the end of 2006. Although the area of antimicrobial prescribing and healthcare-associated infection was not identified for funding in the Department of Health and Children (DoHC) estimates or in the budget, efforts within the HSE identified funds for the appointment of key personnel, i.e. antibiotic-liaison pharmacists, infection control and prevention nurses, and surveillance scientists, along with additional funding for key elements of SARI. There was some delay in filling the additional posts during 2006, although by the end of year progress had been made regarding the filling of these posts in early 2007.

Key achievements during the year included the participation by 45 acute hospitals in the Hospital Infection Society Prevalence Survey of Healthcare-associated Infection, which took place in Ireland and in the UK. This identified a prevalence rate of 4.9% in Ireland. This study provides a starting point for the establishment of a national surveillance system for healthcare-associated infection. Educational initiatives to improve general practitioner prescribing continued and the Sentinel Practice Study identified, amongst other things, the necessity for local antimicrobial prescribing guidelines and the provision of local data on antimicrobial resistance. National data collected as part of the European Antimicrobial Resistance Surveillance System (EARSS) identified increased rates of quinolone resistance amongst *Escherichia coli* causing bloodstream infection and vancomycin-resistant enterococci (VRE). Data on antimicrobial consumption revealed an increase in the prescription of antibiotics in the community, especially quinolones and macrolides. Recent data from 2004 and

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2005 also identified an increase in consumption in hospitals. The third joint conference of the Antimicrobial Resistance Action plan for Northern Ireland and SARI took place in Dublin in 2006. It was a very successful meeting which was attended by over a 100 delegates and focussed on information, education and surveillance.

While much good work continues at local level under the auspices of regional SARI committees, the restructuring of the health service led to a lack of clear reporting relationships, though this appeared to be addressed under the proposed new governance structures agreed in late 2006. There is also concern at the slow pace in the appointment of the necessary personnel, as highlighted in previous reports. Despite this, progress was made under such headings as audit, surveillance of healthcare-associated infection, education initiatives on antibiotic prescribing and improved laboratory diagnostic facilities. Finally, although discussion took place on a draft document regarding a national strategy on the control and prevention of healthcare-associated infection, this was postponed pending the outcome of the proposed new governance framework for this area.

2. Background

Ireland joined the European Antimicrobial Resistance Surveillance System (EARSS) in 1999. This demonstrated a high level of antimicrobial resistance in Ireland, compared to other European countries. Likewise the 1999 North-South MRSA survey found that the higher MRSA prevalence in the Republic of Ireland, compared to Northern Ireland, was associated with inadequate infection control resources. In response to these, and other findings, the Strategy for the Control of Antimicrobial Resistance in Ireland (SARI) was launched by the Minister for Health and Children, Mr. Micheál Martin in April 2001.

SARI recommended the establishment of a national framework, and developments in the areas of surveillance, monitoring the supply and use of antimicrobials, education, enhancing infection control in hospital and in community settings, and research. These recommendations were in line with the 1998 European Union “Copenhagen recommendations” and SARI is now recognised as Ireland’s formal “Inter-Sectoral Coordinating Mechanism” under the European Council Recommendation on the prudent use of antimicrobial agents in human medicine (2002/77/EC). Part of the national framework including the National Committee was established together with Regional Committees and Specialty Sub-Committees. This annual report summarises the activities and developments in the implementation of SARI during 2006, including the activities of the various sub-committees and progress in the regions.

Professor Hilary Humphreys, Chairman, SARI National Committee and Dr Robert Cunney, Honorary Secretary, SARI National Committee, drafted this report, following the receipt of reports from the Regional and Specialty Sub-Committees. Both are grateful to the Chairs of the Specialty Sub-Committees and the Regional Committees, who are listed in Appendix I.

3. National Committee

The National Committee has 32 members with widespread representation from the regions and area authorities, and from various relevant professional groups. Following the re-organisation of the health services in 2004, the National Committee reports to the HSE but has retained representation from the DoHC. During 2006, the National Committee met on three occasions. The scheduled September meeting was postponed because it was not felt productive to have a meeting due to the absence of progress on the implementation of SARI.

There was much discussion and formalising of the reporting relationships of SARI including the establishment and the circulation of minutes between the National Committee and the HSE/SARI Liaison Committee (which met seven times) and the HSE/SARI/DoHC Liaison Committee (which met once). The minutes of both of these committees are circulated to members of the SARI National Committee. At the December meeting of the National Committee, a considerable amount of discussion focussed on establishing and agreeing new governance structures which would ensure the convergence of SARI with other HSE developments. This was to ensure not only that there was good communication between the various stakeholders but that it was also clear that the responsibility for the control of antimicrobial resistance and healthcare-associated infection rested with senior management in hospitals and in other health agencies and institutions.

The failure of the budget for 2006 to incorporate designated funding for the implementation of SARI was a considerable disappointment to the members of the National Committee and to healthcare professionals working in the field. The Chairman and Honorary Secretary of the Committee wrote to and met with the Minister, Ms. Mary Harney to convey this. Drs. Kevin Kelleher and Mary Hynes subsequently succeeded in having €3.8 million funding for SARI allocated from within the total HSE budget, along with a lifting of the cap on public service recruitment to allow the appointment of an additional 52 SARI-related posts. These posts comprised infection control nurses, pharmacists and laboratory surveillance scientists. Progress with appointment of these posts was slow, but appeared to be progressing by the end of 2006.

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The National Committee supported initiatives taken by the Infection Control Sub-Committee (see below) in the areas of MRSA surveillance and the involvement of hospitals in Ireland as part of the Hospital Infection Society (HIS) prevalence survey of healthcare-associated infection, which took place in the spring of 2006 throughout the UK and Ireland (see appendix II). Healthcare worker education as well as education and information for the public were also identified as a priority. A tender document was prepared to seek interest from various agencies to deliver healthcare worker education, and meetings were held with a public relations agency to see how best to provide an information campaign for members of the public.

There was considerable concern expressed about the need for better reference laboratory services in Ireland and a group was established by the HSE to look in to this. This has to be seen in the context of the national review of laboratory diagnostics services, which commenced in 2006. It was not clear to the SARI National Committee, however, whether or not the latter review gave due consideration to the critical need for pre-analytical, analytical and post-analytical involvement in the delivery of microbiology laboratory services.

A draft document was prepared and discussed with regard to an outline of a national strategy for the control and prevention of healthcare-associated infection, along the lines of what is in place in many other health services, including Northern Ireland and Wales. It was decided, however, to postpone the development of a national strategy, pending the establishment of the proposed new HCAI/SARI governance framework.

The third annual joint Antimicrobial Resistance Action Plan (AMRAP)/SARI meeting took place in Croke Park in November 2006. These meetings involve professionals from Northern Ireland and the Republic to exchange information and ideas, and to enable them to up date each other on progress in their respective jurisdictions. This meeting was attended by over 100 delegates and focussed particularly on the issues of education and information dissemination to the public and healthcare workers, as well as surveillance. The conference included a presentation on the preliminary results from the HIS Prevalence survey. A full report on this meeting is included as appendix III of this document.

4. Specialty Sub-Committees

4.1 Infection Control

The Sub-Committee met on four occasions. There was concern expressed at many of the meetings about the apparent duplication of work by multiple groups dealing with issues pertaining to infection control within the HSE. It is the hope of this Committee that this will be rationalised under the proposed new governance framework, so that we have one national committee on healthcare-associated infection to maximise the involvement of all relevant professionals, and to ensure the efficient use of resources and time.

The Committee has supported the conduct of hygiene audits throughout the country and welcomed the improvement in scores following the second audit. Members of the Committee participated in the development of draft infection control standards under the aegis of the Irish Hospital Services Accreditation Board. However, there was concern about the lack of consultation with both the Committee and relevant healthcare professionals, and the failure to distinguish between hygiene and infection control.

The HIS Prevalence Survey of healthcare-associated infection took place between February and May and involved 45 acute hospitals in the Republic (see appendix II). This represented a huge commitment by infection control and prevention teams (ICPT) throughout the country and required critical support from the Health Protection Surveillance Centre. However, all this would not have been possible without support from the HSE in the form of data collectors. This initiative demonstrated the enthusiasm, willingness and expertise that there is in developing a national surveillance programme for healthcare-associated infection, given the provision of some resources. Of the patients surveyed, 4.9% had a healthcare-associated infection. The results of each individual hospital were circulated to each ICPT in late 2006. It is hoped that this survey will be the start of a process which will result in a national surveillance programme and will assist local ICPT in developing surveillance programmes for specific areas.

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Due to the commitment of ICPT in the HIS Prevalence survey, it was decided to postpone the pilot programme on the surveillance of MRSA in intensive care units. An explanatory document and a weekly questionnaire have been prepared. It is hoped to implement this in 2007. The Committee also undertook to review the implementation of National Guidelines on the control and prevention of MRSA, which were launched by the Minister for Health and Children in September 2005, and a questionnaire was drafted for circulation to hospitals in early 2007.

One of the priorities for the implementation of SARI is the education of healthcare workers on simple measures to control and prevent HCAI and also to provide more information to the public on the issues involved. A draft tender document was prepared. It was agreed that this Committee would be involved in reviewing the tender submissions. In addition patient/visitor information leaflets were developed and circulated on MRSA and healthcare-associated infection.

Other issues which the Committee considered were the development of a national strategy for the control and prevention of HCAI as is already in place in Wales and Northern Ireland and this was also discussed at the National Committee (see above). Because of a lack of clarification over reporting relationships and the time commitment required, it was decided not to proceed with the development of a national infection control manual as there is already considerable work being undertaken locally in this area.

Finally, there remains concern about the need for national building standards when developing and refurbishing healthcare facilities. Although, it is not necessarily suggested that we need to draft completely new building standards for Ireland, as satisfactory standards already exist in many other countries, there is a need to agree to review and adapt these for Ireland.

4.2 Hospital Antibiotic Stewardship

The Hospital Antibiotic Stewardship Sub-Committee had previously developed recommendations for strategies to promote prudent antibiotic prescribing in hospitals, and an outline guide to interventions to prevent antimicrobial resistance in hospital practice (both available at www.hpsc.ie). One of the key requirements for the implementation of these recommendations is having designated personnel in hospitals to lead antibiotic stewardship initiatives, particularly microbiologists,

infectious disease physicians and antibiotic liaison pharmacists. The Sub-Committee had planned to develop educational material on prudent antibiotic prescribing and specific clinical guidance on antibiotic prescribing for common infections. However, the Sub-Committee elected not to continue its work in this area, pending the appointment of the additional personnel required to implement the above recommendations. The Sub-Committee hopes to reconvene in 2007, assuming the additional posts agreed in 2006 are filled.

4.3 Community Antimicrobial Stewardship

4.3.1. GP Educational Initiative

The Community Antibiotic Stewardship Sub-Committee has developed a comprehensive educational initiative to promote prudent antibiotic prescribing among General Practitioners (GPs). The pilot project has now finished in the Cork region, but has been set up to run in 2007 in the South Eastern region. Key learning points from this pilot work were:-

- GPs are amenable to education on the topic of improving antibiotic prescribing and valued feedback on their own prescribing.
- Changes in the choice of antibiotic and in the regimens of antibiotic treatment were made but the overall proportion of patients receiving antibiotics did not change. This is consistent with the literature and changing the volume of prescribing is more challenging.
- Local guidelines are needed to more effectively convince GPs of the need to change.

The Sub-Committee also began work on a new approach in trying to facilitate GPs to reduce the overall volume of prescribing, and have developed 'risk charts' for GPs to communicate with patients about the risks and benefits of antibiotics for a number of respiratory tract infections. 'Risk charts' were developed using data from systematic reviews of the literature. The charts were found helpful by GPs although they need to be simplified, and separate versions for doctors and patients may be better. Further development of this methodology, and inclusion in the next round of GP educational initiatives, are planned.

Funding was secured to develop a national GP educational initiative to build on the existing pilot work.

4.3.2 Sentinel Practice Study

The Sub-Committee carried out a pilot project on sentinel surveillance of antimicrobial resistance in GP practices. The key learning points from this project were:-

- The collection of unselected bacteriological specimens from all patients with relevant symptoms was feasible for practices.
- The volume of specimens proved challenging for laboratories to handle.
- The information gleaned was potentially useful although the true utility might only be judged on a larger base.
- Urinary specimens were more useful than respiratory (per-nasal) specimens.
- Antibiotic prescribing was not closely related to resistance patterns.

On the basis of this pilot work, the study has been redesigned to gather a larger number of specimens from more practices, but over a shorter time period. With this design a designated function (which needs funding) can be set up in the laboratory to cope with this, as a once per year event. Additional advantages of this approach would be that annual prevalence and susceptibility reports could be produced to guide prescribing for each 'winter season' rather than information emerging piecemeal over the year. National funding has been secured to advance this new approach.

4.3.3 Patient Education

The need for this, identified as a key element in our community antibiotic stewardship strategy, is being addressed at the national level by the National Committee.

4.4 Surveillance of Antimicrobial Resistance

National data on antimicrobial resistance is provided through the European Antimicrobial Resistance Surveillance System (EARSS). Ireland has one of the highest levels of participation in EARSS, among participating European countries, with Irish EARSS data in 2006 representative of more the 98% of the population. However, Ireland still has a high level of antimicrobial resistance, compared to most other European countries. The proportion of *Staphylococcus aureus* bloodstream

isolates resistant to meticillin (i.e. the MRSA prevalence) has remained stable at approximately 42% since 2001. In 2006 1396 cases of *S. aureus* bloodstream infection were reported to EARSS in Ireland, with 587 (42%) caused by MRSA. While the prevalence of MRSA has remained stable, levels of resistance amongst other EARSS pathogens have continued to rise in 2006. For example,

- Quinolone resistance in *Escherichia coli* increased from 5.4% in 2002 to 21.5% in 2006 (compared to 16.8% in 2005).
- Resistance to aminoglycosides in *E. coli* increased from 2.7% in 2002 to 7.7% in 2006 (compared to 8.7% in 2005).
- The proportion of vancomycin-resistant *Enterococcus faecium* (i.e. VRE) increased from 11.1% in 2002 to 37.3% in 2006 (compared 29.3% in 2005). This is now one of the highest levels in Europe.

These increases in resistance to individual antibiotic classes have been accompanied by increased reporting of both *E. coli* and *E. faecium* strains that are resistant to multiple classes of antibiotics.

A subset of laboratories reporting to EARSS participate in a voluntary system for enhanced surveillance of bloodstream infections. Results from this enhanced system for 2006 continue to show central venous catheters as the most frequently identified source for *S. aureus* bloodstream infection, including MRSA bloodstream infection. Detailed results of EARSS and the enhanced bloodstream infection surveillance system are available from www.hpsc.ie.

4.5 Surveillance of Antimicrobial Consumption

Irish participation in the European Antimicrobial Consumption Surveillance (ESAC) network continues, with data on community antimicrobial consumption calculated from wholesale pharmacy sales data purchased from IMS health. This data has shown a steady increase in the level of antimicrobial use in the community, coupled with increasing use of “broad spectrum” antibiotics in place of “narrow spectrum” agents. The overall outpatient antibiotic consumption for Ireland in 2006 was 21.1 defined daily doses (DDD) per 1000 inhabitants per day, a rise from the previous year’s rate of 20.5 DDD/1000/day, and has been rising steadily at 2.4% per year since 1993 when the rate was 16.1 DDD/1000/day. In an ESAC report of 2002 data for 32 European countries, the range of outpatient antibiotic usage was 10.0 DID (the

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Netherlands) to 32.2 DID (France), thus outpatient antibiotic usage in Ireland is mid-range in Europe. However, many European countries (including France) have demonstrated a reduction in antibiotic consumption in recent years, in contrast to the increasing consumption in Ireland.

In a survey of all public acute hospitals in Ireland, 33 hospitals provided valid antibiotic usage data for 2006. The median rate of antibiotic consumption usage was 93.5 DDD per 100 bed days used (inter-quartile range 80.0 – 100.6).

A protocol for a pilot study of sentinel surveillance of community pharmacies was developed jointly by the Health Protection Surveillance Centre and the School of Pharmacy at Trinity College Dublin. The project was included in HSE SARI funding for 2006 and was scheduled to commence in October 2006. However it was postponed until early 2007 due to difficulties in accessing the allocated funds. Detailed results of antimicrobial consumption surveillance activities are available at www.hpsc.ie and at www.ncpe.ie

5. Regional Committees

These are eight multidisciplinary SARI regional committees that meet regularly and before the establishment of the HSE reported to the Director of Public Health or Chief Executive of the relevant Health Board/Authority. These committees advise on the implementation of SARI in their region or area, and devise the annual priorities for SARI in keeping with those defined at national level. They also advise on the associated resources required to implement the strategy regionally.

5.1 HSE Eastern Region

5.1.1 Number of meetings held

The eastern regional SARI advisory remit is discharged by the Eastern Regional Health Authority Infection Control Advisory Committee (ERHA ICAC). This is a multidisciplinary committee (see current membership in appendix 1) which used to meet on a quarterly basis up to 2005 and reports to the Director of Public Health. Each regional meeting -

- Considers updates from the national SARI committee with regional implications.
- Monitors progress on the agreed regional annual SARI priorities.
- Reviews and distributes the regional EARSS surveillance data.
- Reviews regional funding allocated and distributed.
- Audits SARI funded personnel posts.
- Develops/updates and distributes guidance documents relevant to the strategy.
- Co-ordinates applications for SARI funding.

The committee did not meet throughout 2006 and its formal activities were suspended indefinitely, pending the establishment of a clear governance framework and reporting mechanisms. This action was reluctantly taken by the committee as the terms of reference and governance arrangements for this advisory committee needed to be redefined in light of the dissolution of the 'ERHA' and the subsequent establishment of the HSE.

5.1.2. Major initiatives

No regional SARI initiatives were pursued in 2006 due to the suspension of the regional committee's activities. However informal communication within the region confirmed that local SARI committees were progressing the strategy within the individual health care facilities.

5.1.3. Appointments made as part of the implementation of SARI

The HSE via the National SARI committee in Feb. 2006 requested all regional SARI committees to review and prioritise the July '05 submissions for SARI funding originating from their regions. A subgroup of the 'ERHA' ICAC met in March '06 and produced a document detailing the eastern regions prioritised funding submissions. The HSE announced approval of 52 SARI posts nationally in July '06. However the allocation of 12.5 WTE for the East was not consistent with the above prioritisation document. Representatives of the regional committee secured a meeting with the three relevant Network Managers for the East in Dec. 06. This proved beneficial; the location of the SARI posts was clarified in accordance with the regions prioritisation. Approval for the advertising of these posts was to follow early in 2007. The future structure in the East of 3 SARI committees (1 per network) was also agreed in principle with the consequent dissolution of the current 'ERHA' ICAC. However the governance and terms of reference of these new committees need to be signed off by HSE nationally prior to their formation.

5.1.4. Limitations on the further implementation of SARI regionally

The HSE reform process, which commenced in 2005, created uncertainty as to the structures within which the eastern regional SARI committee should operate. Significant additional financial resources needs to be allocated and prioritised for this strategy nationally if we are to achieve its aims and improve the quality of health care for our population.

The additional SARI posts announced in July 2006 were welcomed. However, the subsequent lack of funding for these posts, and administrative delays in their approval, has delayed their appointment. Consequently, no SARI appointments were made in the East for 2006.

5.2 HSE Southern Region

5.2.1. *Number of meetings held*

The Regional SARI committee meet four times in 2006. In addition a number of subcommittee meetings were held.

5.2.2 *Major initiatives*

- Implementation of CLSI methodology for antimicrobial susceptibility testing in three laboratories.
- A protocol for the collation, analysis and reporting of antimicrobial susceptibility test data in Cork and Kerry was developed by a Surveillance Scientist in the Department of Public Health (DPH).
- A laboratory antimicrobial resistance surveillance project was undertaken on urinary tract susceptibility data using this protocol. The results were published via the local SARI Newsletter.
- A Regional SARI Newsletter was published.
- The hospital acquired infection surveillance system (Form recognition) continues to be used in three centres.
- Regional EARSS data was made available, and a system for distribution implemented.
- A system for monitoring antimicrobial use was established in three hospitals and this initiative is currently being coordinated by a surveillance scientist in the DPH.
- Four hospitals participated in the HIS prevalence survey.
- All laboratories continue to participate in EARSS; three laboratories participate in extended pathogen surveillance; two laboratories participate in enhanced bacteraemia surveillance.
- The Regional SARI committee funded a number of projects -
 - Ongoing funding of the pneumococcal project in Cork University Hospital (CUH),
 - The Department of General Practice project is ongoing.
 - The DPH and Department of General Practice project on Antibacterial Adherence / Mechanisms, Prevalence and Clinical impact of Multi-drug Resistance in Gram-negative Bacteria is being undertaken by the Mercy University Hospital and UCC.

- An evaluation of rapid methodologies for the detection of MRSA from screening samples is being undertaken in one small hospital.

5.2.3 Appointments made as part of the implementation of SARI

No SARI related appointments were made in 2006. As part of the national strategy, eight additional posts were sanctioned in July 2006 comprising four clinical nurse managers in infection control, three antibiotic liaison pharmacists, and one surveillance scientist. In line with the HSE communication in September 2006, recommendations were made to the Area Network Manager in September regarding the allocation of these posts. Unfortunately these posts were not allocated in line with the committee's recommendations.

5.2.4 Limitations on the further implementation of SARI regionally

- The full implementation of national MRSA guidelines and national hand hygiene guidelines in all hospitals is difficult due to the lack of adequate infrastructure and appropriate infection control staffing levels e.g. lack of a consultant microbiologist in Kerry General Hospital (KGH).
- The introduction of an appropriate antibiotic stewardship programme in KGH was not possible due to the lack of a consultant microbiologist. The expansion of appropriate antibiotic stewardship programme in other hospitals did not occur due to the lack of appropriate personnel e.g. antibiotic liaison pharmacist support, clerical support, surveillance scientist.
- The introduction of CLSI methodology in KGH was not possible due to the lack of a Consultant Microbiologist.
- The introduction of the form recognition system for HCAI surveillance in KGH was not possible due to a lack of adequate infection control nurses and a consultant microbiologist.
- Participation in the HIS prevalence surveillance by CUH was not possible due to inadequate numbers of infection control nurses.
- Participation in EARSS expanded surveillance and EARSS enhanced bacteraemia surveillance in CUH and KGH was not possible due to lack of adequate infection control nurse numbers, and laboratory surveillance scientists.
- Participation in the national hospital antimicrobial consumption surveillance use system was introduced in 2004 by CUH.

5.3 HSE South-Eastern Region

5.3.1 Number of meetings held

The South Eastern SARI committee met on three occasions – in February, May and October 2006.

5.3.2 Major initiatives

A three month pilot study of surgical site infection surveillance (SSIS) took place at Wexford General Hospital (WGH) from August – November 2006. This pilot was successful due to the huge commitment and support from the surgical/clinical staff, management at hospital and regional level, IT department, infection control team and our colleagues from public health. The team from the Hospital Infection Surveillance Centre in Belfast gave invaluable support, advice and practical help in setting up and managing the scheme. Local funding was found to appoint a coordinator which was crucial in the implementation of same. This surveillance scheme is continuing and expanding to encompass all surgical procedures at WGH in 2007.

A GP antibiotic prescribing audit is being organised for Waterford GPs via their CME groups.

5.3.3 Appointments made as part of the implementation of SARI

There were no new appointments made in 2006. We received funding for two senior pharmacists, three infection control nurses and one surveillance scientist. The location and activities of these new posts were decided following consultation with our network manager and the relevant professionals already in post. These posts will be filled in 2007.

5.3.4 Limitations on the further implementation of SARI

There has been considerable variation nationally regarding the seniority of surveillance scientist posts. Some posts are being advertised at specialist and chief medical scientist level, which obviously puts centres where such extra local funding is not available at great disadvantage, in the recruitment and in the retention of valuable staff.

Information technology support is also necessary to enable infection control teams to operate more effectively. Local attempts have largely proved unsuccessful to date in

the South East and it is likely that funding to purchase a commercial package will have to be sought.

While we welcome the new appointments as listed above, we would like to highlight that all of these posts will impact on the workload of the clinical microbiologists. To optimise the efficiency of these posts and in the implementation of SARI, we would strongly recommend that further clinical microbiologist posts be funded in 2007.

5.4 HSE Mid-Western Region

5.4.1 Number of meetings held

SARI is incorporated into the Regional Communicable Disease Control Committee. Five meetings were held during 2006.

5.4.2 Major initiatives

- Regional antibiotic guidelines were produced during 2006
- Draft generic regional hand-hygiene guidelines were devised
- A disposable blood-culture pack was developed in the Mid-Western Regional Hospital, Ennis.
- Antibiotic control measures were introduced in elderly care services in Clare.
- Surveillance of *S. aureus* bacteraemia improved as temporary assistance was supplied to the infection control nurse.
- An infection control learning resource pack was produced for healthcare workers.
- Basic infection control training continued.
- Infection control, isolation and decontamination guidelines were updated
- Local infection control committees were set up.
- Information leaflets for patients, visitors, parents, on MRSA and other health care associated infections were developed.
- Regional acute hospitals' hand hygiene observational audit was carried out in collaboration with the Department of Public Health, infection control nurses, and the School of Nursing and Midwifery, Cork.
- Alcohol-based hand gel was introduced to clinical areas.
- Education of non-consultant hospital doctors on appropriate use of antibiotics took place.

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- Monitoring of the use of antibiotics on medical wards commenced in the Mid-Western Regional Hospital, Limerick .

5.4.3 Appointments made as part of the implementation of SARI

During 2006 there were no appointments.

5.4.4 Limitations on the further implementation of SARI regionally

The main impediments to the implementation of SARI recommendations are the insufficient funding and the whole-time equivalent appointment ceiling. Key posts must be approved, funded and filled to meet SARI recommendations. Requirements must be revised in the light of increasing infection control/anti-microbial resistance workload -

Additional full-time microbiologists are required for the region. Only one is in place. The 2003 National Task Force on Medical Staffing (Hanly) Report recommended three full-time consultant microbiologists by 2009 and 4 by 2013.

The original SARI Report (2001) recommended seven infection control nurses (ICNs) for the Mid-Western Area. Five ICNs are in post. One further hospital ICN has been approved under SARI and should be in place in 2007. Another hospital and a divisional nurse manager in infection control are required as a matter of urgency. A community ICN is also required for each of three local health offices.

The appointment of a senior medical scientist, and a secretary to the Mid-Western Regional Hospital Microbiology Laboratory, are required to deal with increased infection control/anti-microbial resistance workload.

An extra half-time specialist in Public Health Medicine and a further 0.5 whole time equivalent surveillance scientist are required in the Department of Public Health, along with clerical support.

5.5 HSE Midlands Region

5.5.1 Number of meetings held

Due to the uncertainties of the changing structures there was no meeting of the SARI Regional Committee held in 2006. Three sub-committee meetings were held to discuss the allocation of SARI posts.

5.5.2 Appointments made as part of the implementation of SARI

Measures were taken to process the appointment of an infection control nurse at the Midland Regional Hospital, Mullingar, a surveillance scientist at the Midland Regional Hospital, Tullamore, and two senior pharmacists at the Midland Regional Hospitals, Tullamore and Mullingar

5.5.3 Limitations on the further implementation of SARI

There is still no permanent consultant microbiologist attached to the Midland Regional Hospital (3 sites Tullamore, Mullingar and Portlaoise). Without this appointment in place, there is a deficit of input on the appropriate management of patients on a day-to-day basis. A temporary person was appointed for a period; however, there were periods when there was nobody in post. It is very difficult, in this situation, to try to further the implementation of SARI.

5.6 HSE Western Region

5.6.1 Number of meetings held

One meeting of the Regional Infection Control / SARI Committee was held in October 2006. The individual hospital Infection Control Committees met frequently.

5.6.2 Major initiatives

Galway

In 2006, Galway Regional Hospitals launched updated guidelines for antimicrobial use. Booklets, wall charts and pocket guides were produced and continuing education meetings were organised. An electronic version of the guidelines was circulated to relevant people in all other hospitals in the network, and copies of the printed pocket book were provided to consultants in one of the other hospitals, who requested them. This initiative represented a huge effort by microbiology, pharmacy and infectious diseases within existing resources, and was intended as a platform for a further programme in 2007, in which it was anticipated that a whole time antibiotic pharmacist would be on staff to drive the process (see below).

The intervention to deal with an outbreak of an extended spectrum beta-lactamase outbreak in a nursing home and the extension from that to provide guidance to all

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GPs on prescribing in nursing homes, was a major initiative and was done from within existing resources.

Mayo

An MRSA patient leaflet and a hospital newsletter were produced

Training for community staff was provided

A waste management proposal was forwarded to hospital management

Minor capital investments to improve building, equipment and infrastructure took place

There is no consultant microbiologist, clerical support or clinical pharmacist

There is a lack of laboratory testing for faeces and serology.

Roscommon

There is an absence of dedicated staff and this continues to be a limitation.

There is continuing difficulty in recruiting an infection control nurse.

5.6.3 Limitations on the further implementation of SARI

There are continuing staffing deficiencies although there have been commitments to new posts in 2007. There are issues around the implementation of the new posts: clarity is needed around the development of cohesive regional service.

The absence of an antibiotic pharmacist as a member of the team at the major regional centre is a limitation in the ability to develop a role as a regional hub of expertise. Similar issues arise in relation to the distribution of surveillance scientist posts around the region in locations where there is not a full team.

There is an ongoing reliance on support and advice from consultant microbiologists and infection control staff in Galway for Ballinasloe. There are no formal arrangements in place for this support and it is very much on a goodwill basis.

5.7 HSE North-Eastern Region

5.7.1 Number of meetings held

The HSE Dublin-North East SARI Committee continued as in 2005, to fund equipment and educational initiatives in both acute and primary care.

5.7.2 Major initiatives

In primary care, among general practices and pharmacies, there was an educational media campaign to promote antibiotic stewardship and a separate one to promote hand hygiene in schools and in catering premises. Community antibiotic prescribing guidelines were distributed to all general practices in the region and many practices availed of funding, specifically for laboratory specimen refrigerators.

A half-day educational conference on infection control in the community was organised for pre-school and long-term residential care workers in November.

In the hospital setting, an MRSA PCR, instrument purchased in 2005, was evaluated as part of a medical laboratory science masters project. Much new software was installed, including laboratory microbiology information system links with general practices, form recognition and sterile supply traceability software upgrades. There was miscellaneous equipment purchased for the microbiology laboratory. Flooring was improved and a flat mopping system was purchased to augment hospital hygiene funding initiatives.

A SARI website with information about our activities was set up, with links to the HSE Dublin North East general website.

5.7.3 Limitations on the full implementation of SARI

Although the laboratory surveillance scientist is funded through SARI, the ongoing employment ceiling has severely hampered significant developments in infection control, and we look forward to the appointment of specific infection control staffing in the future.

5.8 HSE North-Western Region

5.8.1 Number of meetings held

The North-Western SARI committee met on three occasions in 2006.

5.8.2 Major initiatives

Discussion with GPs regarding the production of a local primary care based formulary, and the development of a regional SARI work plan for next 2 years commenced.

One infection control nurse was appointed in Letterkenny; two pharmacy posts are

being processed. The remaining two infection control posts allocated to the region have not been filled as allocated funding was diverted to the western region, against the advice of the regional SARI Committee. Plans were developed to link the two infection control nurse posts to the pharmacy posts, in order to target prescribing in the community hospitals and local nursing homes.

6 On-Going Challenges and Difficulties in the Full Implementation of SARI

A number of on-going challenges and difficulties continued to hamper the full implementation of SARI, many of which are highlighted in the Regional Committee reports. The key on-going issues that were identified in 2006 were:

- The main regional limitation on SARI activity has been control of funding.
- The absence of clear reporting relationships between Regional SARI Committees and the HSE.
- Delays in the appointment of key personnel, e.g. infection control and prevention nurses, surveillance scientists and antibiotic pharmacists despite HSE approval.
- The absence of consultant microbiologists in many hospitals, and inadequate numbers of consultants elsewhere.
- Inadequate infra-structure in some areas such as lack of isolation facilities, sub-optimal information technology systems and diagnostic laboratory systems.

Appendices

I) Members of the National Committee (including Sub-Specialty Committee and Regional/Area Committee chairs)

Nominating Body	Representative
Royal College of Surgeons in Ireland	Professor Hilary Humphreys* (Chair)
Health Protection Surveillance Centre	Dr Robert Cunney** (Honorary secretary)
Health Protection Surveillance Centre	Dr Fidelma Fitzpatrick***
Academy of Medical Laboratory Science	Ms Anne-Marie Bermingham
Health Services Executive	Dr Kevin Kelleher
Health Services Executive	Dr Mary Hynes
Hospital CEO group	Mr Éamonn Fitzgerald
Consumers' Association of Ireland	Ms Dorothy Gallagher
Department of Agriculture & Food	Dr Michael Gunn
Faculty of Paediatrics	Dr Karina Butler
Faculty of Pathology	Professor Martin Cormican
Faculty of Public Health Medicine	Dr Máire O'Connor
Faculty of Veterinary Medicine	Dr Nola Leonard
Food Safety Authority of Ireland	Mr David Nolan
Infection Control Nurses' Association	Ms Breda Corrigan
Irish College of General Practitioners	Professor Colin Bradley****
Irish Pharmaceutical Healthcare Association	Dr Rebecca Cramp
Pharmaceutical Society of Ireland	Ms Marita Kinsella
Royal College of Physicians of Ireland	Dr Lynda Fenelon
University Dental School and Hospital	Dr Christine McCreary
Department of Health and Children	Dr Colette Bonnar
Department of Health and Children	Mr Peter Hanrahan
Department of Health and Children	Ms Sylvia Kelly
Chair of SARI Hospital Antibiotic Stewardship Subcommittee	Dr. Edmond Smyth
Department of Health, Social Services and Public Safety (Northern Ireland) (Observer)	Dr Lorraine Doherty
Chairs of Regional SARI Committees	
East	Dr. Eleanor McNamara
Midlands	Dr. Phil Jennings
Midwest	Dr. Rose Fitzgerald
Northeast	Dr. Rosemary Curran
Northwest	Dr. Anthony Breslin
Southeast	Dr. Anne Moloney
South	Dr. Olive Murphy
West	Dr. Diarmuid O'Donovan

* Also chair of SARI Infection Control Subcommittee

** Also chair of SARI Antimicrobial Consumption Surveillance Subcommittee

*** Also chair of SARI HCAI Surveillance Subcommittee

**** Also chair of SARI Community Antibiotic Stewardship Subcommittee

II) Hospital Infection Society Third International Prevalence Survey of Healthcare Associated Infection

The third national Hospital Infection Society UK (HIS)/ Infection Control Nurses Association (ICNA) prevalence survey of healthcare-associated infection (HCAI) was carried out in acute hospitals in the UK and the Republic of Ireland in early 2006. Data on 75,763 patients were collected (excluding Scotland). Forty-five acute adult hospitals in Ireland participated, representing the vast majority of eligible acute adult Irish hospitals. A total of 7518 Irish patients were surveyed (3512 in regional/tertiary hospitals, 3654 in general hospitals, and 352 in specialist hospitals). The overall rate of healthcare-associated infection (HCAI) was 4.9%. This varied from 6% in regional/tertiary hospitals, to 4.2% in general hospitals and 2% in specialist hospitals.

The survey in Ireland was co-ordinated and organised through the HPSC in conjunction with the Irish members of the HIS Steering group and Dr. Fidelma Fitzpatrick was the Irish co-ordinator. While the UK pilot surveys indicated that a team of three persons (a medical microbiologist, an infection control nurse and another member of the infection control team (ICT)) was the most efficient way to collect the survey data, due to insufficient numbers of microbiologists and ICN's, this team could not be reproduced in Irish hospitals. Therefore the Irish members of the HIS steering group approached the HSE regarding funding of external data collectors, to assist local ICTs to collect survey data. Funding was secured in December 2005 and eight HSE/HPSC teams of two persons (one nurse and one administrator) were employed to assist local ICT's to collect the survey data. In addition a senior infection control nurse, Ms.Roma Ruddy was employed to support these teams and participants with queries regarding survey methodology and definitions.

The main findings of the Irish survey are outlined in Table 1. A provisional report of aggregated Irish results was issued to Irish participants in October 2006 after the provisional UK and Ireland results were presented at the HIS International Conference in Amsterdam. (available at www.hpsc.ie) This report was also sent to the Department of Health and Children, the National Hospitals Office and the Department of Population Health. The survey took hospital ICT's 1897 hours (representing 207 working days for a team of a minimum of three people).

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Participants indicated that they would be happy to participate in subsequent surveys but that this would not be possible without additional investment in infrastructure (both staff and IT).

Table 1: HCAI Prevalence rates in Ireland : Overall and breakdown by HCAI type

	Regional/Tertiary Hospitals	General Hospitals	Specialist Hospitals	Total
Total survey population	3512	3654	352	7518
HCAI	210 (6%)	152 (4.2%)	7 (2%)	369 (4.9%)
MRSA-related HCAI	19 (0.5%)	18 (0.5%)	0	37 (0.5%)
Device*-related HCAI	46 (1.3%)	46 (1.3%)	3 (0.9%)	95 (1.3%)
Secondary bloodstream infection	6 (0.2%)	7 (0.2%)	2 (0.6%)	15 (0.2%)
Primary bloodstream infection	27 (0.8%)	10 (0.3%)	0	37 (0.5%)
Pneumonia	39 (1.1%)	25 (0.7%)	1 (0.3%)	65 (0.9%)
Urinary tract infection	41 (1.1%)	40 (1.1%)	2 (0.6%)	83 (1.1%)
Surgical site infection	50 (1.4%)	32 (0.9%)	1 (0.3)	83 (1.1%)
Other HCAI +	62 (1.8%)	53 (1.5%)	3 (0.9%)	118 (1.6%)

Device*: central-line related primary bloodstream infection, catheter-related urinary tract infection, ventilator-associated pneumonia and device-related "other" HCAI

Other HCAI +: bone, central nervous system, cardiovascular infection, eyes ENT and mouth, gastrointestinal system, reproductive tract, skin and soft tissue, systemic, lower respiratory tract (other than pneumonia)

Although Irish hospitals have participated in previous surveys of HCAI, and many hospitals carry out regular surveillance of HCAI, the third HIS/ICNA prevalence survey of HCAI is the first time that most acute hospitals in Ireland have had the opportunity to collect detailed information on the prevalence of HCAI in their hospital, and to compare their data directly with that from other hospitals in Ireland as well as UK data. Furthermore, this survey represents a benchmark for determining the future impact of measures to reduce infections in our hospitals. A key objective of the prevalence survey, in addition to collecting accurate information on HCAI in Ireland, was to guide future strategies and approaches to surveillance of HCAI. Consequently, this prevalence survey must be seen as the start of a process of

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regular on-going surveillance as required by EU law, rather than the completion of a project, with no long-term implications. Such a national programme of surveillance, which will require funding, will not only provide important data for healthcare planning, but also reassure the public that HCAI is considered important, and that measures are being taken to reduce it.

III) Report on the 3rd Joint Conference on the Antimicrobial Resistance Action Plan (AMRAP) and the Strategy for the Control of Antimicrobial Resistance in Ireland (SARI)

1. Background

The 3rd joint AMRAP/SARI meeting took place in Croke Park, Dublin on 17th November 2006. There were over 100 delegates in attendance, with a wide diversity of attendees, which included microbiologists, infection control and prevention nurses, surveillance scientists, public health specialists, etc. The major themes of this meeting were education/communication, and surveillance. There was a plenary session in the morning that was devoted to the issues surrounding the education of the public, patients and healthcare workers, and in the afternoon the plenary session discussed surveillance and how to use the data. As with recent AMRAP/SARI meetings, a major feature of this conference was the exhibition of posters covering a variety of aspects of antimicrobial resistance, healthcare-associated infection and related matters. The conference, as with previous meetings, also offered interested professionals the opportunity to share expertise and knowledge.

2. Public, Patient and Healthcare Worker Education, chaired by Dr. Hugh Webb, (AMRAP Chair)

“What do patients and the general public need to know, regarding healthcare-associated infection?”

The first speaker was Mr. Stephen McMahon, who is the Chairperson of the Irish Patient’s Association. He initially stated that catastrophes and mistakes can happen, which are often due to system failure, and we must avoid trying to identify somebody to blame. He stressed the needs of patients, which included: being treated with dignity, providing equitable access to healthcare, quality and safety in the delivery of services, access to information, informed consent and the need for patients to be listened to, and to have their grievances addressed. In some countries, patient rights have been incorporated into the constitution. He argued that in Ireland, we need legislation to ensure the collection of relevant data, public reporting of standardised data, better screening for healthcare infections with improved management protocols, ensuring that patients are informed when they acquire healthcare-

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associated infection, improved standards of cleanliness and hygiene, agreeing bench marks for comparison with other countries, a major public education campaign, and finally, support and counselling for patients and families who have MRSA or healthcare-associated infection.

“Public knowledge and attitudes to antibiotic usage in Northern Ireland.”

The next speaker was Mr. Donal McDaid, Director, Social and Market Research, who outlined the results of some surveys of the public’s perception of antibiotic use in Northern Ireland, following a recent campaign. These surveys were carried out on 1,000 adults in 2003 and 2005, and were conducted by telephone. In 2003, 42% of individuals had received an antibiotic in the last year compared with 38% in 2005. When presenting with the flu, earache, or fever, the expectations of patients at receiving antibiotics from General Practitioners (GP) declined between 2003 and 2005. Furthermore, 94-95% of patients trusted their GPs advice on when they required antibiotics. Seventy-one per cent of the respondents were aware of the Health Promotion Agency’s campaign; 86% remembered the recent TV advertisements compared with 10%, remembering that they had seen posters or leaflets as part of the campaign. These recent surveys suggest an improvement in the public’s perception of the need to use antibiotics carefully, but it is planned to continue such surveys in 2007 and beyond.

“Educating healthcare workers on infection prevention and control”

Dr. Judith Richards, who is the Director of Infection Control at the Norfolk and Norwich University Hospital, spoke on educating healthcare workers on infection prevention and control, with particular relevance to medical staff. The UK General Medical Council’s document, “Tomorrow’s Doctor,” outlined five key outcomes for undergraduate medical education, and healthcare-associated infection is germane to them all. Furthermore, infection control and prevention is now one of the top six National Health Service targets. Efforts to ensure better education of medical doctors to comply with best practice should ensure that medical doctors understand the key principles early on, that they establish the right behaviour in their approach to infection prevention, and that enhanced knowledge underpins their practice. She outlined how this can be delivered in outcome-based learning and she reviewed briefly a proposal by the Hospital Infection Society to develop and provide material for medical schools and others. This will involve an explicit statement of learning intent, a flexible curriculum, and clear goals for assessment. It is increasingly likely

that attendance and participation in some form of update on healthcare-associated infection prevention will be mandatory rather than voluntary at the level of postgraduate medical education. This may take the form of face-to-face sessions or accessing materials online.

3. Surveillance of healthcare-associated infection, chaired by Professor Hilary Humphreys (SARI Chair)

“Overview and impact of healthcare-associated infection surveillance.”

The opening presentation of the afternoon session was from Dr. Jacqui Reilly from Health Protection Scotland. She briefly reviewed the background to healthcare-associated infection surveillance, including the work of Florence Nightingale and the SENIC study in the 1980s. National surveillance is often a by-product of local surveillance as that reflects the real issues. Successful components of any surveillance programme should include a definition of what outcomes are to be measured, the collection of reliable data in a standardised manner, the analysis of the data for inter- and intra- hospital variation, and the use of data in a timely manner to improve healthcare. She reviewed much of the recent literature that shows that surveillance of healthcare-associated infection can lead to reductions in infection rates, but this may also be due to the activities of the infection control and prevention teams, the contribution of other staff who become empowered to improve practice, improved education delivery to healthcare workers, and the Hawthorne effect.

“Risk Communication”

Dr. Darina O’Flanagan, Director of the Health Protection Surveillance Centre discussed the issue of risk communication in the context of healthcare-associated infection and she reviewed her recent experiences with dealing with the media. The public’s perception of risk is governed by a number of factors including whether the risk is undertaken voluntarily or whether it is a mandatory risk and whether it is new or previously recognised. The media’s perception is often governed by the need to identify somebody to blame, highlighting whether there has been any secrecy or a cover-up, the human-interest angle, visual images and the ‘fear’ component. Effective health communication of risk in the context of healthcare-associated infection and other matters should include targeting the message to the audience that you are trying to communicate with, telling the audience what it wants to know and not being patronising, avoiding jargon, not promising what may not be possible

to deliver, and ensuring that you get across the message whether it be to the print media or to broadcasting media succinctly, e.g. a 29 word sound-bite for the print media. The way in which the message or the information is conveyed is often as important as the message itself and it is essential that those involved in communicating with the public through the media meet the needs of the media, including often their very short and tight deadlines.

“North-South results for the Hospital Infection Society (HIS) HCAI Prevalence Survey, 2006”

The final presentation of the afternoon session was by Dr. Robert Cunney, Consultant Microbiologist at the Health Protection Surveillance Centre and the University Children’s Hospital, Temple Street, Dublin. Dr. Cunney reviewed the data from the recent HIS Prevalence Survey in the North and in the South. The methodology was very similar in both jurisdictions apart from the use of external data collectors and a slightly different methodology for the scanning of the results in the South. Over 75,000 patients were surveyed throughout the UK, and Ireland, involving 15 hospitals in Northern Ireland and 45 hospitals in the Republic. The overall prevalence rate of infection was 5.5% in Northern Ireland and 4.9% in the Republic, with an overall prevalence rate throughout the UK and Ireland of 7.6%. However, this figure excludes Scotland, which is still analysing its data. In the Republic there were fewer patients mechanically ventilated than those in Northern Ireland and fewer patients over 65 years of age. There were more patients in the Republic on antibiotics (34%) than in Northern Ireland (29.5%) and surgical site infection was commoner in the Republic than in Northern Ireland. Ten per cent of infections were due to MRSA in the Republic compared with 15.64% in Northern Ireland and surgical site infection was caused by MRSA in 58.8% of patients in Northern Ireland compared with 19.4% in the Republic. The reasons for the differences between the North and the South are not obvious and much of the data is still being analysed. Amongst the potential explanations for the differences may be, younger patients in the Republic, smaller and less specialised hospitals in the Republic, the use of external data collectors in the Republic, and the exclusion of hospitals in the Republic without infection control and prevention teams, where the prevalence rate of infection might have been higher. Dr. Cunney emphasised the need to analyse the data further to see what lessons can be learned in terms of further prevention and control strategies.

4. Overview

In the discussion sections after the morning and afternoon sessions, a number of themes emerged. These included the increasing demands being made by authorities and the public on infection control and prevention teams such as the investigation of patient complaints in the absence of the necessary resources, the requirement for making available more data to the public even though reliable/standardised data are often not available, and the reporting of healthcare-associated infection and antibiotic resistance by the media. Surveys of antibiotic use and the public's perception of antibiotics and antibiotic resistance could include the Republic as well as Northern Ireland, because the media outlets are similar on both sides of the border. It is clear that there have been positive developments recently, e.g. the HIS prevalence survey which provides standardised and detailed information about healthcare-associated infection, and the results can and should be communicated to the public. The greater priority given to antimicrobial resistance and the prevention of infection by national authorities, should help enhance the quality of patient care, by controlling antimicrobial resistance and minimising healthcare-associated infection.

Finally, grateful thanks are due to presenters and those attending the meeting for making it a success and we take the opportunity to thank the staff at the Health Protection Surveillance Centre for their assistance in organising the meeting, especially Ms Mary Kate Meegan.