A Strategy for the Control of
Antimicrobial Resistance in Ireland

SARI

Annual Report 2008

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1. Introduction

Healthcare associated infection (HCAI) and antimicrobial resistance (AMR) is recognised as a major challenge. It has been accepted that HCAI and the prevention of HCAI should be at the core of delivery of a quality health service. Efforts to improve patient safety have become a priority for many agencies including the World Health Organisation (WHO) and the European Commission. In October 2004 the WHO launched the World Alliance for Patient Safety urging WHO member states to pay the closest possible attention to the problem of patient safety. At EU level the Luxembourg declaration on patient safety recognised that access to high quality healthcare is a human right to be valued by the EU, its institutions and the citizens of Europe.

In 2005 the Tanaiste and the Minister for Health and Children Mary Harney pledged Ireland's support for a Gold Patients Safety Challenge launched by the Alliance for Patient Safety World Health Organisation. The theme of the challenge for the period for 2005 and 2006 was "Clean Care is Safer Care" with particular emphasis on hand hygiene. The Minister formally pledged Ireland's support to implement actions to reduce healthcare associated infections and to share results in learning internationally.

Although progress has been made in the last number of years in tackling the problems of HCAIs and antimicrobial resistance much work still needs to be done. Many of the gaps that exist have been documented in previous National SARI committee reports.

2. Progress in 2008

As previously documented in earlier annual reports, progress at a National level continues to be slower than expected.

The National SARI committee met on the quarterly basis during 2008. Professor Hilary Humphreys who had chaired the Committee since its inception in 2002 stepped down as chair and his position was filled by Dr. Olive Murphy. Dr. Fidelma Fitzpatrick replaced Dr. Robert Cunning as the honorary secretary of the Committee.

2.1 Meeting with the Minister for Health and Children

The outgoing Chair and the Chair of the National SARI committee and the Honorary Secretary Dr. Robert Cunney met with the Minister of Health and Children in June 2008 to brief her on progress to date and outline future required strategies and the gaps that still exist. The impact of HCAI was outlined and the benefits both in terms of patient outcomes and financial that accrue from implementing appropriate prevention strategies were discussed.

One of the gaps that currently exist in the National SARI committee is its 'intersectoral' role with minimal engagement to date with dental, veterinary, food safety and agricultural sectors. In addition there is no formal international link in the areas of AMR and HCAI. The committee wrote to the Minister of Health and Children in September 2008 requesting clarification of its terms of reference and reporting function. It is hoped that these issues will be addressed in early 2009.

2.2 Patient safety and quality assurance

The commission on patient safety and quality assurance issued a report in August 2008 titled 'Building a Culture of Patient safety'. This report is currently under review by the Department of Health and Children (DOHC). The national SARI committee has held preliminary discussions with the DOHC regarding the need for Health Care Associated Infection and the problem of antimicrobial resistance to be seen as a patient safety and quality issue. This concept also forms the basis of a draft Council recommendation at a European level. In general, the Committee continues to believe that the DOHC needs to set Infection Prevention and Control and the control of Antimicrobial Resistance as a national priority. The Committee is of the view that, despite the reconfiguring that took place with the birth of the HSE, the DOHC has an important role to play in the ensuring that HCAI and AMR is a priority for all healthcare service providers including the HSE.

2.3 National HCAI framework

The committee has begun to consider the impact of putting in place legislative framework for Health Care Associated Infection in Ireland and is anxious that the DOHC considers this under the umbrella of patient safety and quality. This type of system was enacted in the UK in 2006 based on modelling undertaken there in terms of the benefits accrued from pursuing the implementation of a legislative framework rather than continuing with a self regulatory or a system of external assessment. Again discussions were held with DOHC representative on the committee on the need for this type of deliberation to take place in Ireland.

2.4 Information sharing

One of the major challenges continuing to face the National committee and also others attempting to delivery safe care, is access to adequate intelligence to inform our decision making. Some progress was made in 2008 and these are outlined later in the report, however, again more data are required to ensure the appropriate measures are implemented and that progress is made.

2.5 Infection Prevention and Control Standards

The committee formally fed back on the Draft Infection Prevention and Control Standards produced by the Health Information and Quality Authority (HIQA) The final document was forwarded to the Department of Health and Children in the autumn of 2008.

The SARI committee undertook to develop an audit tool for the draft standards following discussion with the HSE governance committee (HCAI GC) and HIQA

The National SARI committee also undertook to develop a hand hygiene audit tool for use at an acute hospital and community sector.

2.6 Draft Teamwork report on Laboratory reconfiguration

This issue was discussed at the 2007 AMRAP meeting however the official report has yet to be published. Given the potential for the reconfiguration of laboratory services at a National, Regional and local level and the impact this would have in terms of delivery of infection prevention and control the draft report was formally considered by the committee and a response to the draft team work report was completed.

2.7 National publications in 2008

National guidelines on the surveillance, diagnosis and management of *Clostridium difficile* – associated disease were published by the Health Protection Surveillance Centre in May 2008. A number of publications were produced by SARI working groups in 2008 including:

- Guidelines for GPs for antimicrobial prescribing in the community
- Recommendations for surveillance of surgical site infection
- National manual for surveillance of surgical site infection in general surgery
- Pilot report of the MRSA in ICU Prevalance Study

2.8 EU antibiotic awareness day

The first European Antibiotic Awareness Day (EAAD), organised by the European Centre for Disease Control, was held on 18th November 2008. Events were held across Europe to promote prudent use of antibiotics, with a particular focus on limiting inappropriate antibiotic use for community-acquired viral respiratory tract infections. To mark the EAAD in Ireland, a scientific seminar and media briefing was held at the Croke Park Conference Centre in Dublin, to highlight developments in promotion of prudent antibiotic use in the community. Public/patient information leaflets on prudent antibiotic use were distributed to community pharmacies, health centres, hospitals etc. and a three-week media campaign was launched. The latter included radio and print advertising, posters, outdoor advertising and distribution of the information leaflet through a national newspaper. Further media and public education campaigns are planned, to coincide with future EAADs and these will be designed to complement the national education programme on prudent antibiotic prescribing for General Practitioners.

2.9 Surveillance data

2.9.1 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 2008 representing 98% of the population. However, Ireland still has a high level of antimicrobial resistance, compared to most other European countries. In 2008, 1,289 cases of S. aureus bloodstream infection were reported to EARSS in Ireland, with 436 (33.8%) caused by MRSA (EARSS data for 2008 are provisional as of 19/03/2009). This represents a statistically significant decrease in the proportion of MRSA compared to 2007 (38.4%). While the proportion and numbers of MRSA have decreased over the past three years, the numbers of isolates that are meticillin-susceptible (or MSSA) have remained stable (2008, 853; 2007, 857) and levels of resistance amongst other EARSS pathogens have continued to rise in 2008. For example,

- Penicillin non-susceptibility in *Streptococcus pneumoniae* (PNSP) increased from 10.4% in 2004 to 23.0% in 2008 (compared to 17.4% in 2007) with a 3.6-fold increase in isolates that are high-level resistant and 2.3-fold increase in isolates with intermediate-level resistance. This is the highest proportion of PNSP since surveillance began in 1999
- Quinolone resistance in *Escherichia coli* increased from 5.4% in 2002 to 23.4% in 2007 (compared to 22.3% in 2007)

- Resistance to 3rd generation cephalosporins in *E. coli* increased from 3.0% in 2002 to 7.5% in 2008 (compared to 6.7% in 2007), while the proportion of isolates that produce extended spectrum beta-lactamases (ESBLs) increased from 1.2% to 5.0% over the same period (compared to 4.1% in 2007)
- ESBL-producing *Klebsiella pneumoniae* increased from 3.7% in 2007 to 7.4% in 2008 (but lower than the 8.6% reported in 2006)
- The proportion of vancomycin-resistant *Enterococcus faecium* (i.e. VRE) increased from 11.1% in 2002 to 35.7% in 2008 (compared to 33.5% in 2007), remaining 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 (or multi-drug resistant). Although the %MDR among *E. faecium* isolates has decreased from 25.6% in 2006 to 16.2% in 2008, the actual numbers of MDR isolates has remained stable at 60-65 per annum. Overall, the total numbers of both *E. coli* and *E. faecium* have been increasing since 2004, from which point coverage of EARSS has been in excess of 95% of the total population.

A subset of laboratories reporting to EARSS participates in a voluntary system for enhanced surveillance of bloodstream infections. Results from this enhanced system for 2008 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: http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanAntimicrobialResistanceSurveillanceSystemEARSS/

2.9.2 Publication of acute hospital data

In 2008, annual (2006 and 2007) S. aureus bacteraemia, alcohol hand rub consumption and antibiotic consumption data in acute Irish hospitals was published. During the year quarterly *S. aureus* bacteraemia and alcohol hand rub consumption data was subsequently published. This was possible due to close co-operation between members of the HCAI GC, SARI and the Health Protection Surveillance Centre (HPSC), and the Local Implementation Teams (LITs) as well as with Regional SARI Committees. Some delays in quarterly reporting occurred because of availability of denominator data. While many caveats remain with this data, this represents an important first step in gathering information on the burden of HCAI in Irish hospitals.

2.10 Liaison with the HSE HCAI Governance Committee

The SARI National Committee continued to be represented on the HSE Healthcare-associated Infection Governance Committee (HCAI GC) and minutes of these meetings circulated to the National Committee members. Improvements in the framework established by the HSE HCAI GC in terms of liaison with the local implementation teams and the regional infection and prevention control committees continue throughout 2008. These are summarised in the report from the regional chairs.

Significant efforts were made by the HCAI GC to ensure that the remainder of the '52 infection prevention and control posts' were in place during the year.

The SARI National Committee formally commented on the draft HSE e learning programme, which is due to be launched in early 2009.

2.11 Position Statement by the National SARI Committee on the issue of Nurse/Midwife prescribing of antimicrobial agents.

Representation from the National SARI committee met with An Bord Altranais regarding the potential impact of nurse prescribing on antimicrobial use. The meeting was productive and resulted in the development of a position paper by the committee on the issue (appendix 3).

3. Specialty Sub-Committees

A number of SARI speciality subcommittees meet during 2008 and were involved in drafting a variety of national recommendations and guidelines. We wish to acknowledge the contribution of committee members who gave of their time despite many other commitments. Membership and further updates of the SARI speciality sub-committees can be found on the SARI Section of the HPSC website. (http://www.ndsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/ StrategyforthecontrolofAntimicrobialResistanceinIrelandSARI/SARINationalCommitteeandsubcommittees/)

3.1 Hospital antibiotic stewardship Working Group: Updating 2003 Antibiotic Stewardship guidelines
In 2008, the group began the process of updating the 2003 hospital antimicrobial stewardship guidelines in light of more recent evidence and international guidelines. The updated guidelines will outline the rationale for antimicrobial stewardship in hospitals, the resources and structures that need to be in place to develop stewardship programmes, and specific guidance on stewardship interventions. These guidelines are due to be published after a consultation process in mid 2009.

3.2 Community Antimicrobial Stewardship: GP Educational Initiative and Development of GP prescribing guidelines
In the GP educational initiative, GPs collect data on their own antibiotic prescribing and participate in educational exercises about antibiotic prescribing in small group Continuing Medical Education (CME) sessions. A pilot project is currently underway in both Cork and Wexford with GP reporting via electronic scanning surveillance forms. The Committee has also developed 'risk charts' for GPs to communicate with patients about the risks and benefits of antibiotics for a number of respiratory tract infections. Draft guidelines for antimicrobial prescribing in the community were published in the latter half of 2008 and circulated widely via the ICGP, SARI Regional Committees and presented at the EU Antibiotic Day in November 2008. These guidelines are also available for download on the committees section on the HPSC website:

3.3 Prevention of Intravascular Catheter-related infection working group: Production of National Guidelines
The Working Group first met in July 2008. National guidelines on the prevention, surveillance, diagnosis and management of intravascular catheter-related infection are due to be published in mid 2009 after a consultation process.

3.4 Prevention of Urinary Catheter-related Infection Working Group: Production of National Guidelines
The Working Group first met in November 2008. National guidelines on the prevention of catheter-related urinary tract infections are due to be published in mid 2009 after a consultation process.

3.5 Prevention of Ventilator-associated pneumonia: Production of National Guidelines
The group is due to meet in early 2009.

3.6 MRSA in ICU Prevalance Study Steering Group: Pilot project and Commencement of the study proper
The primary objective of the meticillin-resistant *Staphylococcus aureus* (MRSA) in intensive care unit (ICU) prevalence study is to develop a simple surveillance protocol for monitoring MRSA in Irish ICU's. The surveillance program is designed so that the burden of collecting data for participants is kept to a minimum. The project is currently overseen by the MRSA in ICU steering committee which was formed from members of the SARI infection control subcommittee.

The surveillance protocol was piloted from June 2007 to March 2008. During the nine-month pilot period (Q3 & Q4 2007, Q1 2008), several amendments were made to the protocol following valuable hospital feedback and the number of participating hospitals increased. Following each quarter, a report was circulated to participants to provide an overview of each hospital's data and to allow comparison with data gathered from the national set. At the end of the pilot period, 31 hospitals (eight regional, 20 general, one specialist and two private hospitals) were providing weekly MRSA surveillance data. A report documenting the initial findings of the pilot period was published in April 2008 and sent to the HCAI GC and SARI National Committee. The pilot report can be downloaded from the 'MRSA' section of the HPSC

website. The main findings outlined in the pilot report were that ICU's varied considerably in acuity, size, the provision of infection prevention and control resources (specifically isolation room infrastructure) and the use of different MRSA screening approaches.

Subsequent to the pilot report, several amendments and updates to the protocol were introduced. The finalised protocol (version 8) is currently employed by participants. Changes include the addition of the proportion (%) of 'ventilated patients' in an effort to provide a crude indication of illness burden within the ICU and stratification of results by ICU type to account for general ICUs that cater for mixed categories of patients (i.e., high dependency and coronary care units). There are currently 32 ICUs participating in the study. As in the pilot period, participants receive quarterly reports which provide an overview of each hospital's data and allow comparison with the national dataset.

3.7 Surveillance of HCAI: Production of National Recommendations for surgical site infection surveillance and National Protocols

In 2008, the committee produced recommendations for the development of a high quality national surgical site infection (SSI) surveillance system that is standardised and internationally comparable. These recommendations will also support other HCAI surveillance activities. This document was published in May 2008 and submitted to the HCAI GC. Key recommendations included:

- An initial focus on in-patient surveillance and introduction of a SSI surveillance programme over a range of surgical specialities as dictated by the specialities and requirements of that institution.
- Filling of gaps in surveillance infrastructure (IT and personnel) which should include access to the government VPN network to ensure a secure information network for national surveillance. In some areas, a regional-based infrastructure for data processing and analysis may be appropriate to reduce duplication of work and resources
- SSI protocols must be standardised and adhere to other European frameworks (e.g. Pan Celtic / HELICS) for comparative analysis of SSI incidence rates both nationally and internationally.

The committee also produced a National Protocol for surveillance in general surgery at the same time as the recommendations. Both are available for download from the HPSC website under 'Surgical Site Infection Surveillance'. In September 2008 the committee meet with representatives from one of the maternity hospitals to discuss SSI surveillance post caesarean section and a draft national protocol is due to be published in early 2009.

4. Reports from Regional Committees

There are nine SARI regional committees. Membership of each committee contains multidisciplinary representation from both acute and non-acute sectors. Details of membership of the Regional Committees, terms of reference and other relevant documentation can be found on the SARI section of the HPSC website. The chair of each regional committee is a member of the SARI National Committee.

4.1 North East

a. Governance

- **Regional committee:** The committee is chaired by Dr. Rosemary Curran and Dr. Peter Finnegan is the secretary. The Regional Infection Control Committee was formally amalgamated with the regional SARI Committee in 2008 with all members accommodated on either the regional SARI Committee or one of the three community care area Infection Control Committees which were newly formed.
- **Local implementation team (LIT):** The regional SARI committee reports regularly to the Local Implementation Team.

b. Surveillance

- A number of subcommittees were set up as part of the regional committee in i) surveillance ii) antimicrobial stewardship iii) infection control education iv) infection control guidelines ii) laboratory methods. These working groups will contribute to the action plan for the region in 2009.

c. Education

- The community Infection Control committees conducted hand hygiene audits in the Services for the Older Person, Disability and Mental Health residential institutions.
- Formal training in infection control was undertaken for community staff
- The committee also funded various Infection Control educational courses, books DVD's journals and laboratory equipment with SARI funding throughout the year.
- A regional antimicrobial prescribing guideline for hospitals was developed in 2008

d. Implementation of National Guidelines and limitations on further implementation of SARI

- The main concerns are the Transformation Programme (the status of the acute hospitals is under constant review and amalgamations are being planned so it is difficult to plan for e.g. a surveillance scientist in one hospital when the plan is to amalgamate it with another) and inadequate infection prevention and control staffing (e.g., surveillance scientists and antimicrobial pharmacists)

4.2 Northwest

a. Governance

- **Regional Committee:** The committee is chaired by Dr. Anthony Breslin and meets on a quarterly basis.
- **Infection prevention & control committees (IPCC):** Functioning Infection Prevention and Control Committees are established in both the hospitals and the community in the region.

b. Surveillance

- **Participation in National Initiatives:** All hospitals participate in EARSS, enhanced EARSS bacteraemia surveillance, ESAC, the MRSA in ICU study, alcohol hand rub consumption and the invasive pneumococcal typing project.
- **Other surveillance activities:** The Letterkenny General formulary in place and the committee is presently working on delivery of Donegal Community formulary. A system is in place for regional analysis of data and data distribution to relevant authorities:

c. Education

- A quarterly newsletter is produced by the committee

d. Implementation of National Guidelines and limitations on further implementation of SARI

- The main limitation of SARI in the region is lack of access to a defined budget.

4.3 Dublin North

a. Governance

- **Regional Committee:** The committee is co-chaired by Ms. Angela Fitzgerald, HSE Network Manager and Dr. Fidelma Fitzpatrick and meet on a quarterly basis.
- **LIT:** LIT/Infection prevention and control meetings occur on a six weekly basis. Regional EARSS, hospital antimicrobial consumption and alcohol hand rub usage is reviewed on a regular basis at these meetings. In addition, the chair of the LIT is a member of the regional SARI committee and the LIT update is a standing item at all meetings. Relevant documents from the SARI National Committee are circulated to the regional committee and to the LIT when appropriate. One of the major achievements of this liaison was ensuring the appointment of relevant infection control staff and antibiotic pharmacists is some of the hospitals and the plan to appoint two new infection prevention and control nurse posts in the community in two of the local health areas.
- **IPCC:** Functioning Infection Prevention and Control Committees are established in the six hospitals and the three local health areas in the region. However, as there is no formal consultant microbiologist cover in the community in Dublin North there is a gap in representation on the community infection prevention and control committees.

b. Surveillance

- **Participation in National Initiatives:** The six hospitals in the region participate in EARSS, ESAC, the MRSA in ICU study, alcohol hand rub consumption and the invasive pneumococcal typing project.
- **Other surveillance activities:** The committee has produced and discussed regional surveillance data on GP urinary isolates and regional community antibiotic consumption data, reviewed regional EARSS data, produced antimicrobial guidelines and disseminated this data via a regional newsletter, which has been circulated widely and placed in the SARI section of the HPSC website. The region plans to participate in the 2009 ESAC nursing home project.

c. Education

- In November 2008, the committee held an educational day held for healthcare workers in the community on Standard and transmission-based precautions, Sharps safety, MRSA and *C. difficile*. The committee planned to repeat this day on an annual basis.
- GPs in the region participate in the ICGP CME educational programme on antimicrobial prescribing.

d. Implementation of National Guidelines and limitations on further implementation of SARI

The committee plan to review implementation of MRSA and *C. difficile* guidelines in 2009. The limitations and restrictions on the further implementation of SARI in the region identified by the committee included:

- Infection control expertise in the community. A strategy for the development of infection control services in the community was prepared in 2008 and submitted to the LHOs and PCCC regional manager. Gaps in consultant microbiologist community cover. Gap in IPCN in disability and residential settings
- Lack of IT support for IPCN/ICPTs in several settings.

e. Other activities

- **Community subgroup:** A Community Subgroup performed a profile (definition and overview of services, including current infection prevention and control structures) of Primary Community and Continuing Care in the Dublin Area - North of the Liffey. The LHO Dublin North Central Infection Control Committee undertook a gap analysis of laboratory services (provided by a number of

hospitals in the area and the NVRL) in their area. Gaps identified included: Communication of laboratory results: (specifically no direct IT link between laboratories and services and delays in receipt of written results) and a need for dedicated Consultant microbiology advisory and support services (support and advice in infection prevention and control, antibiotic stewardship, interpretation of laboratory reports and patient management). A range of suggestions included the appointment of a Community Microbiologist, attendance of a consultant microbiologist annually at the Infection Control Committee and a dedicated access pathway to a Consultant Microbiologist.

- **Laboratory subgroup:** Laboratory workload was evaluated in terms of MRSA screening, *C. difficile* testing and community work. This demonstrated a significant increase not only in total specimens processed by the six laboratories (349432 specimens in 2006, 402320 specimens in 2008) , but also an increase in MRSA screening (4973 in 2006, 71564 in 2008) and *C. difficile* toxin testing (6317 in 2006, 7724 in 2008).

4.4 Dublin South

a. Governance

- **Regional committee:** The committee is chaired by Dr. Susan Knowles and meets on a quarterly basis.
- **LIT:** Meetings with the LIT commenced in the latter half of the year.
- **IPCC:** Functioning Infection Prevention and Control Committees are established in the hospitals and four community infection prevention and control committees were newly established in late 2008. However most of the community committees have no infection prevention and control or microbiology personnel on the committee.

b. Surveillance

- **Participation in National Initiatives:** All hospitals in the region participate in EARSS, enhanced EARSS bacteraemia surveillance, ESAC, the MRSA in ICU study, alcohol hand rub consumption and the invasive pneumococcal typing project.
- **Other surveillance activities:** There is a system in place for regional analysis of data and data distribution to relevant authorities**.** Data is distributed from HPSC nationally and discussed at regional SARI meetings.

c. Education

- Educational programmes on infection prevention and control issues are in place in the hospitals but not in the community.
- Members of the various IPCTs speak at a variety of GP educational meetings.

d. Implementation of National Guidelines and limitations on further implementation of SARI

In general, failure to implement guidelines in Hospitals is because of poor infrastructure and facilities in many institutions. There is insufficient capital funding to address many deficiencies. Poor infrastructure and facilities also applies to many non-acute facilities. Regarding limitations and restrictions on the further implementation of SARI in the region, the committee noted that funding was allocated in the past for a number of infection prevention and control posts including a community ICN. This post was not filled and monies were used for alternative uses. There is therefore a major gap in infection prevention and control expertise in non-acute settings and one of the greatest challenges in the region will be providing appropriate infection control advice and cover to the community.

4.5 Dublin MidLeinster

a. Governance

- **Regional committee:** The committee is chaired by Dr. Phil Jennings and meets on a quarterly basis.
- **IPCC:** Functioning infection prevention and control committees are present in all seven hospitals.

b. Surveillance

- **Participation in National Initiatives:** All hospitals participate in the invasive pneumococcal disease

typing project and consumption of alcohol hand rub, six in EARSS, two in enhanced EARSS bacteraemia surveillance, five in ESAC and six in the MRSA in ICU project.

c. Implementation of National Guidelines and limitations on further implementation of SARI

National guidelines on prevention of MRSA, Hand hygiene, *C. difficile*, antibiotic stewardship, norovirus, Legionella, *Mycobacteria tuberculosis*, prevention of Nosocomial Aspergillosis and TSEs are present in all hospitals and a number of hospitals have implemented Quality Improvements Plans in respect of prevention of MRSA, Hand hygiene, *C. difficile* and antibiotic stewardship. Lack of appropriate resources were identified as a barrier to implementation of national guidelines, e.g., insufficient laboratory resources to fully implement *C. difficile* guidelines. Regarding infection prevention and control staff, in some hospitals the IPCN covers Long-stay Community Hospitals and Intellectual Disability Units, however a number of outstanding posts still remain, including antibiotic pharmacists (two posts in two hospitals), infection prevention and control nurses (six hospitals), consultant microbiologists (two posts covering five hospitals) and surveillance scientists (two posts covering four hospitals)

Limitations and restrictions on the further implementation of SARI in the region include

- Lack of antibiotic Pharmacists and Surveillance Scientists in some hospitals.
- Insufficient laboratory staffing - Work of Surveillance Scientist impinged upon due to lack of laboratory staff in some hospitals.
- Unfilled posts in some hospitals due to recruitment problems or unfilled leave.
- More Consultant Microbiologist hours required in some hospitals
- Lack of sufficient IPCNs in some hospitals.

As with other regions, there is no SARI funding for additional posts or improvement plans towards implementing the SARI Strategy imposes an additional burden on already overstretched resources.

4.6 West

a. Governance

- **Regional committee:** The committee is chaired by Prof Martin Cormican, who took over as from Dr. Diarmuid O'Donovan in late 2008. Good communication links have been established with the LIT.

4.7 Southeast

a. Governance

- **Regional committee:** The Regional Infection prevention and control Committee is chaired by Dr Maeve Doyle and meets quarterly. Regional EARSS, hospital antimicrobial consumption and alcohol hand rub usage is reviewed on a regular basis at these meetings. Appropriate document control is in place at a regional level.
- **LIT:** The LIT committee is chaired by the LHM for Carlow/Kilkenny, Anna Marie Lanigan and meets on a monthly basis.
- **IPCC:** Functioning Infection Prevention and Control Committees are established in the four acute hospitals and in the non-acute hospitals in Carlow/Kilkenny. Four community infection prevention and control committees were newly established in 2008. However most of the community committees have no infection prevention and control or microbiology personnel on the committee.

b. Surveillance

- **Participation in National Initiatives:** All hospitals participate in EARSS, enhanced EARSS bacteraemia surveillance, ESAC, the MRSA in ICU study, alcohol hand rub consumption and the invasive pneumococcal typing project.
- **Other surveillance activities:** Enhanced *C. difficile* Surveillance commenced in October 2008 in acute/non-acute hospital patients. The committee has a system in place for regional analysis of data and data distribution to relevant authorities.

c. Education

- Education activities include those provided by the infection prevention and control teams, education for NCHDs and participation in the GP educational programme.
- In addition, there is a regional mechanism for dissemination of data and advice in the form of a Communicable Disease Update produced by the Public Health Department in the region.

d. Implementation of National Guidelines and limitations on further implementation of SARI

National guidelines have been implemented in the region including MRSA, Hand hygiene, *C. difficile*, Antibiotic stewardship, Norovirus, Prevention of Nosocomial Aspergillosis, *Mycobacteria tuberculosis* and Legionella. Local TSE guidelines are currently being produced

Gaps in specialist staff in the region including lack of dedicated infection prevention and control expertise in the community, with many staff overstretched (e.g., One IPCN covering 6 non-acute hospitals in Carlow/ Kilkenny). The committee have identified a number of future requirements in order to implement SARI including consultant microbiologists and IPCNs with a remit for the community in addition to covering the acute sector.

The committee have identified the need for specialist staff as outlined above as the primary requirement.

4.8 South

a. Governance

- **Regional committee:** The committee is chaired by Dr. Fiona Ryan and meets on a quarterly basis. There is coordination of relevant regional documents, e.g. infection control policy documents for various settings and antimicrobial guidance documents, by the regional committee.
- **LIT:** The chair of the regional committee and a consultant microbiologist (Dr. Olive Murphy) participate in weekly teleconference with the LIT. Relevant national documents are circulated through the LIT. However, intermittently a problem with documents coming down directly through the pillars, especially PCCC, without knowledge of LIT occurs.
- **IPCC:** Functioning Infection Prevention and Control Committees are present in the hospitals in the region. However, in smaller acute hospitals there is a problem with appropriate membership. There is not a microbiologist and specialist in public health medicine (SPHM) on all. Also there is a lack of clinical consultant input on some. With respect to Infection Prevention and Control Committees in the community, initially one committee was established for all of Cork and Kerry, with appropriate representation, including Infection control nurse, Microbiology and Public Health. Now each of the five LHO's has established a committee. Only one of the LHO committees, Kerry, has representation from ICN, Microbiology and Public Health. The four committees in Cork do not have this representation as there are not sufficient personnel to support all four. The regional committee is currently reviewing how best to support these committees.

b. Surveillance

- **Participation in National Initiatives:** All hospitals (nine) participate in EARSS, and the invasive pneumococcal typing project. All public hospitals (seven) participate in alcohol hand rub consumption surveillance. Three hospitals participate in enhanced EARSS bacteraemia surveillance, four in ESAC and six in the MRSA in ICU study, alcohol hand rub consumption and the invasive pneumococcal typing project.
- **Other surveillance activities:** Enhanced *C. difficile* surveillance, commenced in October 2008 in acute/non-acute hospital patients. The committee has a system in place for regional analysis of data and data distribution to relevant authorities. The committee produces and disseminate an annual report on regional data. The following SARI related activities took place in 2008 in the region, the majority under the auspices of the regional committee:
    - Production of Antimicrobial guidelines for acute hospitals
    - Ongoing roll out of the implementation of CLSI methodology for susceptibility testing in three laboratories

- Ongoing development of a protocol for the Collation, Analysis and Reporting of Antimicrobial Susceptibility Test Data in Cork and Kerry.
- Laboratory AMR surveillance project undertaken on respiratory susceptibility data using this protocol. Results were published via the Regional SARI Newsletter
- The hospital acquitted infection surveillance system (Teleform) continues to be used in three centres
- Regional EARSS data available and a system for distribution implemented

c. Education

- The regional committee have provided funding to UCC to commence training course in health protection/infection control. To date one certificate course held in 2008. Now integrated MPH course established offering training in health protection/infection control to cert, diploma and masters level.
- The GP educational programme on antibiotic stewardship is currently being rolled out in Cork and Kerry through ICGP CME system.
- Regular newsletters are produced by the committee, at least two per year, and widely disseminated. In addition the ICPNs in the region also produce a newsletter on infection control.
- The Regional SARI committee funded a number of projects;
    - Department of Public Health and Department of General Practice project on Antibacterial Adherence / Mechanisms,
    - Prevalence and Clinical impact of Multidrug Resistance in Gram-negative Bacteria being undertaken by the University Hospital and UCC
    - Training course for ICPN's and Pharmacists
    - Journal resources for KGH
    - UCC Health protection course

d. Implementation of National Guidelines and limitations on further implementation of SARI

National guidelines have been introduced in the region including MRSA, Hand hygiene, *C. difficile*, Antibiotic stewardship, Norovirus, Prevention of Nosocomial Aspergillosis, *Mycobacterium tuberculosis,* TSE and Legionella. However, some limitations and restrictions exist with regards to implementation including:

- Lack of adequate infrastructure, e.g. lack of isolation facilities
- Lack of adequate ICPNs in some hospitals, e.g. CUH should have four ICNs but currently has two ICNs
- Severe lack of ICPNs in the community, currently only two ICPNs for all of Cork and Kerry
- Lack of Antimicrobial stewardship pharmacists. Awaiting appointments for Kerry General Hospital (KGH), Mallow General Hospital (MGH) and Bantry General Hospital (BGH), (One post to be shared between MGH and BGH).
- Lack of full time Consultant Microbiology service in KGH. At present 0.3 temporary service.

Regarding limitations and restrictions on the further implementation of SARI, the areas identified as priority for staffing in 2009 are:

- Increase in Consultant Microbiology service. An agreed strategy for the development of this service was produced by the RICC in 2008 and submitted to the Hospital Network Manager.
- Increase in IPCNs staffing levels in the community. A strategy for the development of infection control services in the community was prepared in 2008 and submitted to the LHOs and PCCC regional manager.
- Filling of all existing SARI posts.
- Attaining and then maintaining IPCN levels in the acute hospitals. For example, CUH is the largest

hospital in the area. Their allocated staffing is 4 ICNs but has never reached this level. Until they have their full complement they will not be in a position to fully partake in SARI surveillance.

- There is also a lack of secretarial support for IPCNs in several settings.

4.9 Midwest

a. a. Governance

- **Regional committee:** The committee is chaired by Dr. Patrick O'Sullivan and meets on a quarterly basis. Relevant documents from the SARI National committee are circulated in the region. A system is in place for Regional analysis of data and data distribution to relevant authorities
- **LIT:** The regional committee chair attends monthly LIT meetings.
- **IPCC:** Functioning Infection Prevention and Control Committees are present in the hospitals and the community in the region. Close links exist between the Mid West Regional Hospital Limerick's Consultant Microbiologist, who is the only one in the Region, and the Department of Public Health.

b. Surveillance

- **Participation in National Initiatives:** All hospitals participate in EARSS, enhanced EARSS bacteraemia surveillance, ESAC, the MRSA in ICU study, alcohol hand rub consumption and the invasive pneumococcal typing project.
- **Other surveillance activities:** A *C.difficile* sub-committee has been established and is ongoing.

c. Education

The committee publishes a quarterly newsletter (ID link). To date participation in the GP programme is outstanding.

d. Implementation of National Guidelines and limitations on further implementation of SARI

- The HR restrictions and failure to replace staff on maternity leave have major implications for the regions capacity to implement SARI
- MRSA guidelines: local policy in place at MWRHL but needs updating since national guidelines were launched in Sept 2005. Delay mainly due to inadequate infection prevention & control (nursing & medical) resources at MWRHL. Policy updated at St John's by ICN & Consultant Microbiologist following launch of national guidelines in Oct 2005.
- Hand hygiene guidelines: implemented, regular audits being conducted at St John's by ICN. Audits not being conducted at MWRHL due to lack of infection control nursing resources
- *C difficile*: updated and implemented except for laboratory diagnostics –testing limited to specimens from over 65years and specific requests.
- Antibiotic Stewardship Guidelines: local guidelines revised. Representation by Microbiologist on Drugs & Therapeutic Committees at MWRHL & St John's but plan to have specific stewardship committee when second microbiologist appointed.
- Norovirus and Prevention of Nosocomial Aspergillosis guidelines: implemented
- Mycobacteria guidelines: awaiting publication of new guidelines
- Legionella guidelines: implemented at St John's and current protective measures at MWRHL being audited by external body – will be implementing recommendations thereafter. Second guidelines not released in final format.
- TSE guidelines: not implemented. Awaiting second microbiologist. Envision difficulty with implementation due to additional risk assessment form filling.

4.10 Infection Prevention and Control Staffing by region – Current and outstanding posts

- **Current Posts**

Hospital	Consultant Microbiologists	Surveillance Scientists	IPCN	Antibiotic Pharmacists
North East				
Hospitals	1	2	5.6	0.4
Community	Nil	Nil	3	Nil
North West				
Hospitals	2	2	4	2
Community	Nil	2	2	Nil
Dublin North				
Hospitals (including long stay)	6.3	4	19.1	3
Community	Nil	Nil	Nil	Nil
Dublin South				
Hospitals (including long stay)	7	3	15	2
Community	Nil	Nil	Nil	Nil
Dublin Mid Leinster				
Hospitals	4.05	3	12	4
Community	Nil	Nil	Nil	1
South East				
Hospitals	3	2	10	3
Community	Nil	Nil	One covering six non-acute/long-stay (Carlow/ Kilkenny)	Nil
South				
Hospitals	3.4	3	11.25	2
Community	Nil	Nil	2.5	Nil
Midwest				
Hospitals	1.2	2	5	2
Community	Nil	1	2	Nil

- **Outstanding posts:**

Hospital	Consultant Microbiologists	Surveillance Scientists	IPCN	Antibiotic Pharmacist.
North East				
Hospitals	1	1	2.4	
Dublin North				
Community			2	
Dublin South				
Hospital	1		2	
Dublin MidLeinster				
Hospital	2	2	6	3
Community			IPCN at Midland Regional Hospital at Tullamore, Mullingar and Portlaoise also covers Long-stay Community Hospitals & Intellectual Disability Units.	
South				
Hospital				2 (1 appointed due to start early 2009)
Community			1 (maternity leave)	
Midwest				
Hospital	1		0.5(maternity leave)	
Community				

Appendices

1. Members of the National Committee – December 2008

Chair:
Dr. Olive Murphy, Consultant Microbiologist, Bon Secours Hospital, Cork

Hon. Secretary:
Dr. Fidelma Fitzpatrick, Consultant Microbiologist, HPSC and Beaumont Hospital, Dublin.

Surveillance assistant:
Ms. Siobhan Dowling, HPSC

Chairs of SARI Regional Committees:

1. **Dublin North**: Ms. Angela Fitzgerald, Network manager, HSE-National Hospital Office, Dublin & Dr. Fidelma Fitzpatrick, Consultant Microbiologist, HPSC and Beaumont Hospital, Dublin (co-chairs)
2. **Dublin South**: Dr. Susan Knowles, Consultant Microbiologist, National Maternity Hospital, Dublin.
3. **Dublin Mid-Leinster**: Dr. Phil Jennings, Public Health Specialist, Department of Public Health, HSE - Midland Area, Tullamore.
4. **South East**: Dr. Maeve Doyle, Consultant Microbiologist, Waterford Regional Hospital.
5. **South**: Dr. Fiona Ryan, Public Health Specialist, HSE-South.
6. **MidWest**: Dr. Patrick O'Sullivan, Public Health Specialist, HSE Mid-Western, Limerick.
7. **West**: Professor Martin Cormican, University College Hospital, Galway
8. **NorthWest:** Dr. Anthony Breslin, Public Health Specialist, HSE NorthWest, Donegal.
9. **NorthEast:** Dr. Rosemary Curran, Consultant Microbiologist, Our Lady of Lourdes Drogheda, Co. Louth

Irish Patients Association: Mr. Stephen McMahon

The Consumers Association of Ireland: Ms Dorothy Gallagher

Department of Health and Children: Dr Collette Bonner

Department of Health, Social Services and Public Safety (Northern Ireland):
Dr Lorraine Doherty Consultant Epidemiologist/Senior Medical Officer - Infectious Diseases

HSE:
Dr. Kevin Kelleher, Assistant National Director for Health Protection, Population Health
Dr. Paul Kavanagh, Specialist in Public health Medicine / Clinical Lead for Patient Safety and Healthcare Quality, NHO

HPSC:
Dr. Robert Cunney, Consultant Microbiologist, HPSC and Temple Street Children hospital

HIQA (observer):
Dr. Deirdre Mulholland

Infection Prevention Society
Ms Breda Corrigan, Infection Control Nurse Specialist, Midlands General Hospital, Tullamore

Surveillance Scientist Association:
Ms Mary Kelleher, St. James's Hospital

Royal College of Physicians of Ireland:
Dr Lynda Fenelon, Consultant Microbiologist, St Vincent's University Hospital, Dublin

Academy of Medical Laboratory Science:
Ms Anne-Marie Meenan, Coombe Women's and Infants University Hospital, Dublin.

Irish Pharmaceutical Healthcare Association:
Dr Rebecca Cramp

Hospital Pharmacist Association of Ireland:
Ms Deirdre Lynch, Cork University Hospital, Cork

Pharmaceutical Society of Ireland: Ms Marita Kinsella

Faculty of Veterinary Medicine:
Dr Nola Leonard, Dept Veterinary Medicine, UCD

Department of Agriculture and Food:
Dr. John Egan, Central Veterinary Research Laboratory, Co. Kildare

Irish College of General Practitioners:
Professor Colin Bradley, Dept General Practice, University College Cork

Faculty of Pathology:
Professor Martin Cormican, University College Hospital, Galway

Chair, Antimicrobial Stewardship:
Dr. Edmond Smyth, Consultant Microbiologist, Beaumont Hospital, Dublin

CEO Group:
Ms. Margaret Swords, Deputy CEO/Head of Operations, Beaumont Hospital, Dublin

2. SARI strategy - Implementation and Plan 2009-2011

1. The development of a National framework			
	Target	**Gaps/ Necessary action**	**Comment/target/date**
1a	*Development of a three-tier strategy, with local, regional and national tiers*	• Ensure corporate responsibility for AMR and HCAI is enforced at hospital, community and network management levels • Re-establish Regional Committees with clear terms of reference and reporting relationships • Ensure advisory role of regional committee is recognised and acted upon by each LIT	• Agree mechanism for ensuring that corporate responsibility enforced • Re-establish if Regional committee structures in place (2008/9) • Establish if LITs operational (2008/9) • Establish if IPCC functioning in all acute hospitals (2008/9) • Establish PCCC needs (2009)
1b	*Establishment of a multi-disciplinary national committee,*	• Formalise and strengthen the role of the SARI National Committee as the national scientific advisory committee • Review structure, membership and terms of reference of SARI National Committee	• Aim to have HCAI and AMR set as a National priority and a patient safety and quality issue by DOHC (2009) • Confirm current terms of reference, membership and reporting relationship (2009)
1c	*Ensure International co-operation, via National Committee*	• Establish formal links between the National Committee and ECDC, in relation to AMR • Commitment to and full participation in the Improving Patient Safety in Europe (IPSE) initiatives and related surveillance networks • Re-establish inter-sectoral role of NSARI committee	• Confirm requirements and agree with DOHC (2009) • Discuss role of National SARI committee and Patient safety initiative with DOHC(2009) • Confirm current terms of reference, membership and reporting relationship (2009)

2. The surveillance of antimicrobial resistance			
Target	**Action**	**Gaps/ Necessary action**	**Comment/target/date**
2a	*Establish an infrastructure both at public health and laboratory level to ensure that reproducible, standardised, antimicrobial resistance data are collected and analysed locally, regionally and nationally in a timely manner*	• Appointment of surveillance scientists to all laboratories (at least 1 whole time equivalent (WTE) for larger laboratories and 0.5 WTE for smaller laboratories) • Agree and set surveillance targets for AMR • Roll-out of CIDR to all laboratories and Departments of Public Health still ongoing • Implementation of CLSI methodology in all laboratories still ongoing • Upgrade hospital and laboratory IT systems, aiming for one national, integrated, user-friendly and compatible system that provides data in real time.	• Reassess current Surveillance Scientists posts and identify gaps through the RICC network (2009) • Agree surveillance targets for AMR in 2009 and timeline for the analysis of same (2009) • CIDR roll out ongoing. See report. Set targets with CIDR management for inclusion of AMR/EARSS/HCAI • Establish implementation rate annually through liaison with EARSS committee (2009) • Engage in programme for the development of systems (2009)
2b	*DOHC establishes a network of national reference laboratories as a priority to service routine laboratories help develop and evaluate new technologies and provide epidemiological data and facilitate research in this area. In addition, these laboratories should provide expert advice on areas of clinical practice and infection control*	• Appropriate funding of existing reference laboratories insufficient • Establishment of additional reference services, particularly services relating to AMR and HCAI • National review of laboratories (Teamwork report) implementation plan published without consultation with NSARI committee	• NSARI committee will establish status of current reference facilities (2009) • Establish current status of committee reviewing reference laboratory facilities (2009) • Ensure NSARI committee agenda adequately represented on this committee (2009)
2c	*Routine laboratories are resourced to enable them to provide reproducible and standardised antimicrobial resistance data in a timely manner*	• Appointment of additional laboratory scientists • Appointment of additional consultant microbiologists	• NSARI committee to request formal involvement in 'Implementing a New System of Service Delivery for Laboratory Medicine Services' process(2009) • Update 2007 gap analysis(2009) • Need to establish community needs (2009)
2d	*A general practice based sentinel surveillance system is established to ensure adequate geographic sampling for antimicrobial resistance in the community*	• National roll-out of sentinel surveillance needs to be progressed	• Establish current status and agree target if appropriate (2009)

2e	*A hospital based surveillance system is established to detect hospital-acquired infections and ensure adequate sampling for antimicrobial resistance in this population*	• Assess target to allow compliance with EU directive 2119/98/EC • Development of surveillance methodologies to ensure the collection of standardised agreed data sets	• Establish and agree target for standardised surveillance (2009). Consider and evaluated need for ○ Ventilator associated pneumonia ○ Surgical site infection surveillance ○ Enhanced surveillance of *S. aureus* bacteraemia ○ Central venous access device associated infection ○ Enhanced surveillance of *C. difficile* associated disease ○ Urinary catheter associated infection
3. The monitoring of the supply and use of antimicrobials			
Target	**Action**	**Gaps/ Necessary action**	**Comment/target/date**
3a	*The tight legislative controls that exist in the area of antimicrobial prescribing are maintained and enforced*	• Audit of compliance with legislative controls required	• Establish and agree targets via subcommittee(2009)
3b	*A system for the collection and analysis of antimicrobial use and prescribing in hospitals and the community is established*	• Antibiotic liaison pharmacists required for all hospitals • Ensure all hospital pharmacies have appropriate information technology systems • Re-evaluate need for funding for surveillance at NCPE	• Reassess current antimicrobial pharmacists posts and identify gaps through the RICC network (2009) • Update from RICC (2009) • Subcommittee to review and advise (2009)
3c	*A basic set of data agreed by the committee be collected, i.e. the origin of the prescription, e.g. hospital or community, the agent and dose prescribed, the indication and the length of treatment*	• Antibiotic liaison pharmacists required for all hospitals • Agree a core dataset for hospital antibiotic prescribing audits • Establishment of community pharmacy sentinel surveillanc	• Agree targets for hospitals based on the subcommittee report and establish gap (2009) • Agree which targets should be mandatory • Establish needs (2009)
4. The development of guidance in relation to the appropriate use of antimicrobials			
	Target	**Gaps/ Necessary action**	**Comment/target/date**
4a	*Expert opinion on the diagnosis, investigation and management of patients with infection is available 365 days a year to all medical practitioners both in the community and hospitals*	• Appointment of additional consultant microbiologists and infectious disease physicians to include community areas as appropriate	• Reassess current posts and identify gaps through the RICC network (2009) • Need to establish community needs

4b	*National guidelines for appropriate antimicrobial usage are drawn up and introduced in all aspects of clinical practice both in hospital and the community*	• Finalise GP prescribing guidelines and roll-out nationally • Ensure all hospitals have up to date local prescribing guidelines, in line with section 4c below	• Update on progress(2009) • Agree target based on subcommittee report and liaise via Regional committees and LITs (2009)
4c	*A process by which a reduction in inappropriate use of antibiotics can be achieved should be defined.*	• National roll-out of GP educational programme • Hospital antibiotic stewardship recommendations need to be updated and implemented • Establish training for antibiotic liaison/ infectious disease pharmacists in Ireland	• Set targets and identify rate limiting step(2009 • Set targets and identify rate limiting steps(2009 • Develop formal link with professional body and Universities(2009)
4d	*Interventions aimed at changing clinical practice are supported, encouraged and reinforced by a process of regular audit*	• As per 4b above	• Review subcommittee report and agree targets for 2009-2011
4e	*Methods, which will aid the above processes, are developed, e.g. decision-support systems, computer assisted prescribing or other prescribing aids*	• As per 4b above • Possible collaboration with academic institutions to develop computer-assisted prescribing	• Develop formal link with professional bodies and universities (2009)
4f	*Improvements in vaccine uptake, in particular influenza and pneumococcal vaccine, should be targeted and prioritised*	• Education of health professionals and the general public regarding the importance of influenza and pneumococcal vaccination of at risk groups	• Establish formal link with HPSC to ensure appropriate input from NSARI committee (2009) • Consider use of RICC as a conduit to HCWs for advice on same
4g	*A monitoring system is established to measure the effectiveness of these interventions*	• Development of national standards for antibiotic stewardship • Audit of antibiotic stewardship programmes • Standardised surveillance of influenza and pneumococcal vaccine uptake among patient required • Standardised surveillance of influenza vaccine uptake among healthcare workers required	• Review subcommittee report and agree targets for 2009-2011 • Liaise with HPSC for reports • Liaise with HCAI governance /HPSC for reports

5. Education			
Target	**Action**	**Gaps/ Necessary action**	**Comment/target/date**
5a	*Educational programmes form the foundation for implementation of guidance strategies and a comprehensive programme should commence at undergraduate level. These programmes must be directed at all clinical professional groups providing patient care, the pharmaceutical industry and the general public*	• Public information campaign on prudent antibiotic use, to accompany GP educational programme, required • Inclusion of education on AMR and HCAI to be made a mandatory requirement for undergraduate and postgraduate education of health professionals • Ensure e-learning programme on infection prevention and control is mandatory and delivered to all healthcare workers • Development and delivery of mandatory e-learning modules on prudent antibiotic prescribing for all medical students and clinicians	• Feedback awaited from HSE re success of recent publicity campaign (2009) • Develop formal links with universities and Royal Colleges (2009) • Update on progress and set target for 2009 • Develop formal links with universities and Royal Colleges
5b	*Education on home hygiene, attention to public health issues, and those developing the strategy consider the maintenance and/or improvement of housing and social conditions*	• Improvement in housing and social conditions will depend on government policy, and is probably outside the scope of SARI	

6. The development of principles in relation to infection control in the hospital and community			
Target	**Action**	**Gaps/ Necessary action**	**Comment/target/date**
6a	*National infection control standards and principles are set both for hospitals and the community*	• Implementation of HIQA standards • Extension of HIQA standards to community settings	• Update on progress and set target for 2009 • Update on progress and set target for 2009
6b	*The necessary infection control services to meet the set standards are resourced and established in hospitals and the community*	• Appointment of additional infection control and prevention nurses, including community-based appointments • Appointment of additional consultant microbiologists • Commitment to implement recommendations on hospital infection control infrastructure, including increasing the proportion of single rooms and phasing out of multiple-bedded rooms • Reduction in bed occupancy rate to <85%	• Update on Acute hospital gaps identified (2009) • Establish community needs (2009) • As above. • Building guidelines published
6c	*The education of all health care workers on issues relating to infection control is prioritised*	• See 5a	• Ongoing. Awaiting feedback from HCAI on roll out of e-learning program

6d	*The importance of well-established preventative measures, e.g. hand hygiene, are reinforced and compliance improved*	• Establish mandatory education programmes for healthcare workers, and ensure resources needed to deliver the programmes are provided
		• Development of an audit tool for hand hygiene
		• Development of guidelines and care bundles for the following areas
		  ○ Central venous access devices
		  ○ Ventilator associated pneumonia
		  ○ Urinary catheter care
		  ○ Surgical site infection
		  ○ *Clostridium difficile*
			• Make recommendations on need for mandatory education for all HCWs (2009)
			• Development and roll out of hand hygiene audit tool (2009)
			• Setting of targets for hand hygiene compliance
			• Development of guidelines (2009)
			• Setting of targets for implementation and monitoring (2009)

6e	*A monitoring system is established to measure the effectiveness of these interventions*	• National standardised surveillance of HCAI (see section 2e) • Development of national audit tool for infection prevention and control and process indicators, in line with HIQA infection prevention and control standards	• See 2e • Development and roll out of a standardised audit tool for the HIQA standards

7. Future research in this area			
Target	**Action**	**Gaps/ Necessary action**	**Comment/target/date**
7a	*The financial support provided by governmental bodies for research and development in the area of AMR is increased*	• Repeat funding for research with national steering committee established to oversee grant allocation	• Ensure that the DOHC sets HCAI and AMR as a national priority • Formalise links with Universities, professional bodies etc
7b	*AMR becomes a priority for funding bodies supporting health care and biomedical research*		
7c	*Pharmaceutical companies are encouraged to continue the development of new agents and collaboration with academic units*		
7d	*A network of national reference laboratories is established to support the above research structure*	• See section 2b	

3. Position Statement by the National SARI Committee on the issue of Nurse/Midwife prescribing of antimicrobial agents.

The Irish Medicines Board (miscellaneous provisions) act 2006 (commencement) order 2007 and its associated regulations, has enabled registered nurses/midwifes to prescribe drugs since mid - 2007. The National SARI Committee, in meeting one of its terms of reference to formulate recommendations with regard to appropriate antimicrobial use in Ireland, is anxious to document our view on this issue in relation to the prescribing of antimicrobial agents.

Following a meeting between the outgoing chair and secretary of the National SARI Committee in April 2008, the Committee is reassured that a number of governance structures have been put in place which will help assist attempts to ensure the effective and appropriate use of antimicrobial agents when prescribed by a registered Nurse/Midwife. The committee also recognizes a commitment given by the Minister of Health and Children to conduct a review of the regulations in 2009 to ensure they are working as planned.

The Committee wishes to emphasize that both it and other International experts in this area agree that, currently, a significant proportion of antimicrobials are prescribed inappropriately by those already licensed to prescribe. The committee, as part of its terms of reference continues to make recommendations to various bodies in Ireland regarding strategies to improve prescribing by all professionals entitled to prescribe. Given the potential public health impact of inappropriate antimicrobial prescribing and the possibility of severe adverse events such as C. difficile infection, and the significant increase in prescribers as a result of the new legislation the committee feels that additional measures should be considered to facilitate appropriate antimicrobial prescribing by this professional group.

The National SARI Committee recognises that a nurse/midwife must have completed a recognised training program, that a local written policy to support nurse/midwife prescribing must be in place, that the prescribing must have been approved by the Institution, that a collaborative practice agreement (CPA) must be in place and that the prescriber must be able to audit his or her practices.

The National SARI Committee recommends that

a. nurse/midwife prescribing of antimicrobials should not take place in institutions/care settings where a recognised program of antibiotic stewardship has not been instituted.

b. the HSE and other private institutions should ensure the CPA's and the local written policies relating to nurse/midwife prescribers are approved by the local drug and therapeutics committee and where the CPA includes antibiotics approval should be sought from those responsible for antibiotic stewardship at that institution/care setting. A decision to over-ride the view of that expert should only be taken by the governing body of the institution.

c. Specific content on antibiotic prescribing should be included in the UCC and RCSI training programs and the National SARI Committee should liaise with these schools to progress this.

d. Any system for audit proposed by An Bord Altranais should include specific reference to the audit of antimicrobial use. It is the view of this committee that an Bord Altranais and the individual hospitals should consider the development of specific audit tools in this area. The audit tool, frequency of audit and review of data should be undertaken by those responsible for antibiotics stewardship within the hospital. The National SARI committee should be involved in the development of such an audit tool.

e. An update on antibiotic prescribing should be included in printed bulletins for nurse/midwife prescribers.

f. A copy of the SARI guide on the prevention of antimicrobial resistance in hospitals should be distributed to all nurse/midwife prescribers

g. A system of communication between the National SARI Committee and an Bord Altranais should be developed. The National SARI Committee is happy to contribute in any way to an Bord Altranais regulation and professional guidance frameworks to ensure that likelihood of prudent and appropriate antimicrobial use.

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