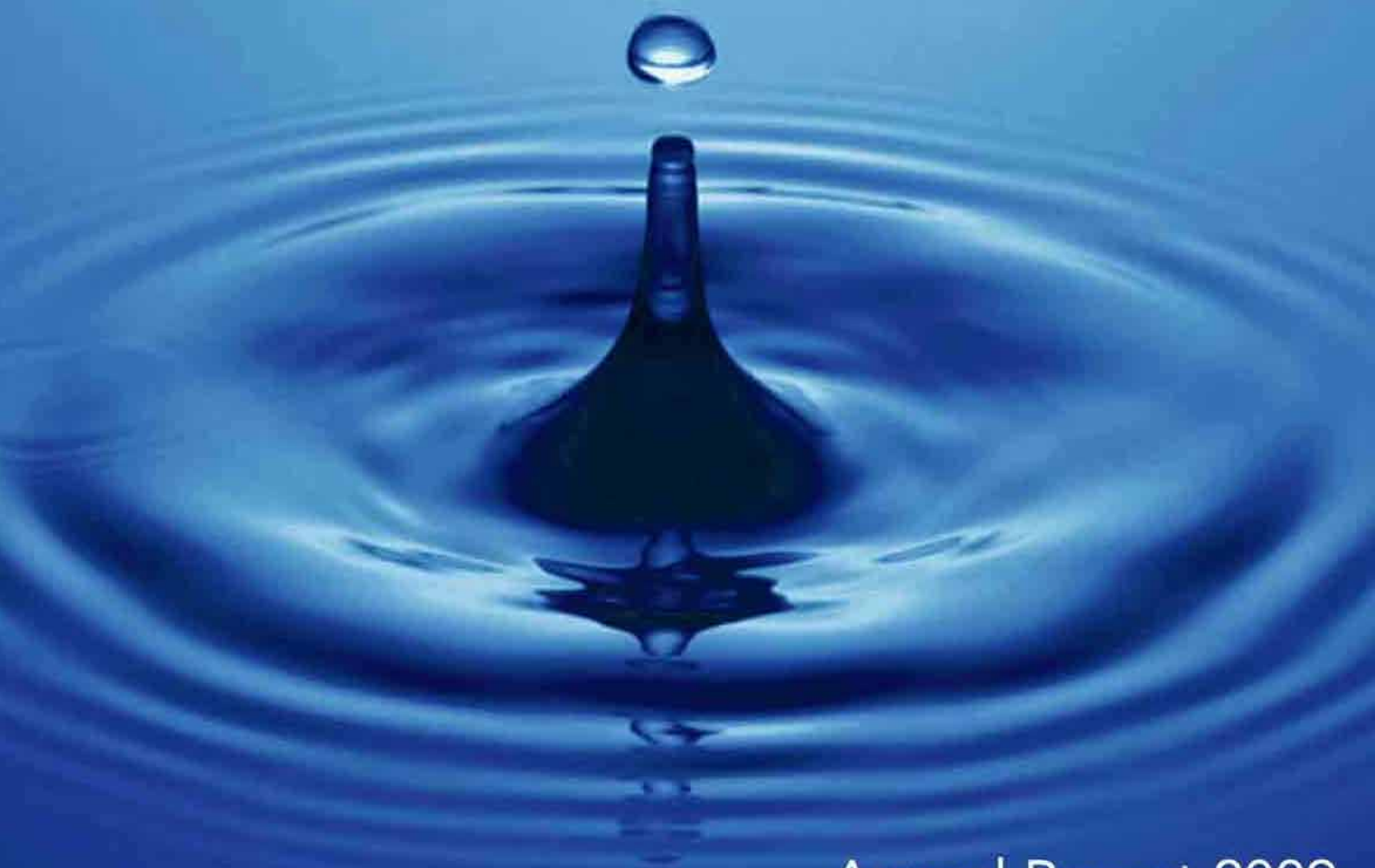


A Strategy for the Control of  
**Antimicrobial Resistance in Ireland**

S A R I



Annual Report 2009

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## 1. Progress in 2009

### 1. Progress in 2009

Prevention and control of healthcare associated infection (HCAI) and antimicrobial resistance (AMR) is an integral part of patient safety and should be at the core of the delivery of a quality health service. The Luxembourg declaration on patient safety recognised that access to high quality healthcare is a basic human right and efforts to improve patient safety have become a priority for the World Health Organisation (WHO) and the European Commission. Since 2005, Ireland has supported the Alliance for Patient Safety World Health Organisation, when the Tanaiste and the Minister for Health and Children, Ms. Mary Harney formally pledged Ireland's support to implement actions to reduce HCAI and to share results in learning internationally.

#### 1.1 Key Achievements and the Impact of the H1N1 pandemic

The National SARI Committee (NSARI) met on the quarterly basis during 2009. Publication of some documents and guidelines were delayed because of the additional work commitments of committee members due to the Influenza A H1N1 pandemic. Key achievements included:

- Publication of national guidelines
  - Prevention of Intravascular Catheter-related Infection
  - Hospital Antimicrobial Stewardship
- Development of a national audit tool for acute hospitals to measure compliance with the Health Information and Quality Authority's (HIQA) Infection Prevention and Control Standards in conjunction with the National Hospitals Office, HSE and the Health Protection Surveillance Centre (HPSC). A series of nation-wide workshops in relation to the audit tool took place in 2009 attended by committee members.
- Development of the national hand hygiene observation audit tool and standard operating procedure in conjunction with HPSC and the Infection Prevention Society
- Development of a national manual for surveillance of surgical site infection post caesarean section
- Liaison with dental professionals including reporting of infection control procedures in HSE Dental Services, introduction of a hand hygiene audit tool and development of antimicrobial stewardship guidelines for dentistry (planned for 2010).

#### 1.2 Liaison with the Department of Health and Children

In 2009, the NSARI continued to attempt to clarify the Committees terms of reference and reporting relationship with the Department of Health and Children (DoHC). The NSARI was originally established in 2001 by the DoHC and no formal change in terms of reference has occurred to date. Since 2005, the Committee has reported to both the DoHC and the CEO of the HSE. A number of gaps exist however including the committees ability to fulfil the designated 'intersectoral' coordinating role given the limited engagement with dental, veterinary, food safety and agricultural sectors; the lack of a formal link in the areas of AMR and HCAI and inability of the committee to respond to evolving national changes and developments e.g. membership, HSE reconfiguration, engagement with clinical directors, involvement in the critical area of patient safety and health sector regulation.

In 2009, the NSARI meet with Dr Tony Holohan, Chief Medical Officer, to discuss the above. The Committee was informed that it is intended by the DOHC to review its terms of reference in light of changing health system structures and other reforms and to revert in due course. A response was not received however it is hoped that this will be completed during 2010.

### 1.3 Liaison with the Health Services Executive (HSE)

#### 1.3.1 HSE HCAI Governance Committee and publication of national AMR surveillance data

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. Quarterly *S. aureus* bacteraemia, alcohol hand rub consumption and antibiotic consumption data in acute Irish hospitals continued to be published in 2009. Some delays in quarterly reporting occurred because of availability of denominator data. While many caveats remain with this data, this represents important information on the burden of HCAI in Irish hospitals.

##### 1.3.1. i National AMR data

National data on AMR 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 2009 representing 100% of the population. Some improvements in AMR proportions have been observed in recent years, most notably for meticillin resistant *Staphylococcus aureus* (MRSA). However, Ireland still has a high level of AMR compared to most other European countries:

- In 2009, 1,309 cases of *S. aureus* bloodstream infection were reported to EARSS in Ireland, with 355 (27.1%) caused by MRSA (EARSS data for 2009 are provisional as of 01/05/2010). The proportion of MRSA has declined significantly year-on year since 2006 (2006, 41.9%; 2007, 38.5%; 2008, 33.8%). While the proportion and numbers of MRSA have decreased over the past four years, the numbers of isolates that are meticillin-susceptible (or MSSA) have increased over the past year (2008, 853; 2009, 954). Major improvements in the electronic system for the reporting of these data were made in 2009.
- Penicillin non-susceptibility in *Streptococcus pneumoniae* (PNSP) increased from 10.4% in 2004 to 23.0% in 2008. In 2009, the proportion decreased to 20.2%
- Quinolone (e.g. ciprofloxacin) resistance in *Escherichia coli* increased from 5.4% in 2002 to 23.3% in 2008. In 2009, the proportion decreased slightly to 22.3%
- Resistance to 3<sup>rd</sup> Generation Cephalosporins (e.g. cefotaxime, ceftazidime) in *E. coli* increased from 3.0% in 2002 to 7.5% in 2009 (the same level as in 2008), while the proportion of isolates that produce extended spectrum beta-lactamases (ESBLs) increased from 1.2% to 5.8% over the same period (compared to 5.0% in 2008)
- ESBL-producing *Klebsiella pneumoniae* increased from 3.7% in 2007 to 8.2% in 2009 (compared to 7.4% in 2008)
- The proportion of vancomycin-resistant *Enterococcus faecium* (i.e. VRE) increased from 11.1% in 2002 to 38.3% in 2009 (compared to 35.7% in 2008), remaining one of the highest levels in Europe
- 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). The proportion of MDR among *E. faecium* isolates increased from 16.2% in 2008 to 26.7% in 2009, the highest level since surveillance commenced in 2002. The proportion of MDR among *E. coli* isolates decreased from 12.1% to 10.4% over the same period.

##### 1.3.1. ii National antimicrobial consumption

Antibiotic use in Irish hospitals is high, compared to other European countries, and the rate of use increased nationally from 2005 to 2007. In 2008, however, there was an overall 5% decrease in antibiotic use, compared to 2007, with a considerable decrease in the consumption of quinolone antibiotics. This reduction is particularly significant when set against a previously rising level of antibiotic use. Preliminary analysis suggests that much of this reduction is accounted for by hospitals with antimicrobial stewardship programmes. Such stewardship programmes have been shown to be hugely cost saving at individual hospital level and a national assessment of the cost-benefit of antimicrobial stewardship teams is currently being prepared.

Up until 2008, Ireland was one of only four countries in Europe where the level of antibiotic use in the community (i.e. non-hospital use) was increasing annually. This was associated with a marked increase in antibiotic resistance levels in *Streptococcus pneumoniae* ("pneumococcus"). In 2009, however, community antibiotic use decreased for the first time since 2002. While it is not possible to definitively show cause and effect, the decrease in antibiotic use coincided with the HSE public information campaign on prudent antibiotic use that was put in place as part of the first European Antibiotic Awareness Day in November 2008. National roll-out of the GP prudent antibiotic prescribing education programme and ongoing public information campaigns are required to further reduce community antibiotic use and limit the spread of antibiotic-resistant pneumococcal infections.

### **1.3.2 HSE Directorate of Quality and Clinical Care**

The NSARI meet with Dr Barry White, National Director, Quality and Clinical Care and Dr. Joe Devlin, Director for Quality, Safety and Risk HSE to discuss the position of the SARI national committee at national HSE level and specifically where the committee could interact with their directorate. At the meeting, it was agreed that the work of the NSARI was essential for patient safety and quality. In the future national guideline development will be done via a new national committee that will include the Royal Colleges, Dr. White's directorate and HIQA however pending further clarification Dr. White requested that the NSARI continue with guideline development as it has done so in the past.

### **1.3.3 HSE Laboratory Services Modernisation Group**

Committee members meet with Martin McDonald and Ruth Langan of the HSE Laboratory Services Modernisation Group in August 2009 to discuss the priority of HCAI/AMR in the delivery of laboratory services. Issues highlighted by the NSARI are summarised in Appendix 2 and included the integrated service provided by microbiology laboratories which encompassed patient management, infection prevention and control and antimicrobial stewardship and the potential fragmentation of laboratory services as a consequence of the division between community and hospital testing.

### **1.3.4 Communication regarding Nurse Prescribing of Antimicrobials**

The committee continues to liaise with An Board Altranais. In addition, a representative from the committee has met with HSE Nursing Services Director Siobhan O'Halloran regarding the procedures in place for nurses prescribing.

## **1.4 Publication of National Infection Prevention and Control Standards**

In May 2009, National Infection Prevention and Control Standards were published by the Health Information and Quality Authority (HIQA). The committee welcomed the standards and the NSARI wrote to HIQA in June 2009 expressing the Committees interest in participation in the HIQA process of setting standards in the area of patient safety whereby they pertain to Infection Prevention and Control and Antimicrobial Resistance. In response to these standards a national audit tool was developed, in conjunction with the National Hospitals Office, HSE and the Health Protection Surveillance Centre (HPSC), to measure compliance with standards. A series of nation-wide workshops in relation to the audit tool took place in 2009 attended by committee members.

## **1.5 Hand Hygiene**

The committee was involved in the development of the national hand hygiene observation audit tool and standard operating procedure in conjunction with HPSC and the Infection Prevention Society.

## **1.6 EU antibiotic awareness day 2009**

The second European Antibiotic Awareness Day (EAAD), organised by the European Centre for Disease Control, was held on 18<sup>th</sup> November 2009. As with the first EAAD, in November 2008, the focus of this Europe-wide event was on limiting inappropriate antibiotic use for community-acquired viral respiratory

tract infections. To mark EAAD 2009, a position statement on prudent antibiotic use was produced by the Irish College of General Practitioners (ICGP), and a joint press statement was circulated by HSE Communications, HPSC and ICGP, which generated some national and local media coverage of the event. Unfortunately, funding was not available for a repeat of the scientific seminar and successful public information campaign that took place around EAAD 2008.

### **1.7 Dental Developments during 2009.**

Liaison with dental professionals included reporting of infection control procedures in HSE Dental Services, introduction of a hand hygiene audit tool and development of antimicrobial stewardship guidelines for dentistry which will be published in 2010. A decontamination audit form was produced and distributed to all Principal Dental Surgeons and the replies will be collated in 2010 and a gap analysis produced highlighting areas where improvements can be made. An implementation strategy was also agreed to keep improving the quality of infection control in all dental departments. Work has also commenced on the development of antimicrobial guidelines for dental practitioners.

## 2. Specialty Sub-Committees

Despite pressure of additional work due to the Influenza A H1N1 pandemic, a number of SARI speciality subcommittees were involved in drafting a variety of national recommendations and guidelines as outlined below. We wish to acknowledge the contribution of Committee members who gave of their time freely despite many other work commitments. Membership and further updates of the SARI speciality subcommittees can be found on the SARI Section of the HPSC website (Appendix 3).

### **2.1 Hospital Antibiotic Stewardship Working Group: Updating 2003 Antibiotic Stewardship guidelines**

The updated hospital antibiotic stewardship guidelines were published in December 2009.

### **2.2 Community Antimicrobial Stewardship: GP Educational Initiative and Development of GP prescribing guidelines**

The subcommittee has now progressed the draft guidelines and these have been circulated for comment. Dr B Carey, subcommittee member, has committed to providing support to ensure that these are rolled out nationally and appropriately evaluated with the plan to publish an updated, completed version in 2011.

### **2.3 Prevention of Intravascular Catheter-related Infection Working Group: Production of National Guidelines**

National guidelines on the prevention, surveillance, diagnosis and management of intravascular catheter-related infection were published in December 2009.

### **2.4 Prevention of Urinary Catheter-related Infection Working Group: Production of National Guidelines**

National guidelines on the prevention of catheter-related urinary tract infections are due to be published in mid 2010 after a consultation process.

### **2.5 Prevention of Ventilator-associated pneumonia: Production of National Guidelines**

National guidelines on the prevention of ventilator-associated pneumonia are due to be published in mid 2010 after a consultation process.

### **2.6 MRSA in ICU Prevalence Study Steering Group**

Representative from the Intensive Care Society of Ireland and the Irish Association of Critical Care Nurses joined the Steering Group in 2009. 32 Irish intensive care units (ICUs) participated in 2009, 18 level 2/3 ICUs and 14 level 3 ICUs and the median national MRSA prevalence (21 months from 1<sup>st</sup> April 2008 to 31<sup>st</sup> December 2009) was 9.1% which reflects mostly patients colonised with MRSA upon admission to the ICU. Differences in isolation room resources were identified, for example 71% ICUs with isolation rooms have one to two isolation rooms though four ICUs had none. The majority of isolation rooms were found to be equipped with hand sinks (98%) but only 20% were found to have anterooms. The steering group discussed methods to improve ICU HCAI surveillance as there are several limitations to using a simple point prevalence surveillance tool for the ICU setting and plan to review the protocol in early 2010.

### **2.7 Surveillance of HCAI: Production of National Recommendations for surgical site infection surveillance and National Protocols**

The committee published a national protocol for SSI surveillance post caesarean section in early 2009 but did not meet subsequently due to other work commitments of committee members including the H1N1 pandemic.

### **2.8 Updating guidelines for the Control of MRSA in Acute Hospitals and the Community**

It was agreed that 2005 guidelines needed to be updated. Professor Hilary Humphreys has agreed to chair this subcommittee and will aim to complete the guideline in 2010.



## 4. Reports from Regional Committees

Membership of the nine regional SARI committees 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

The committee is chaired by Dr. Rosemary Curran and reports regularly to the Local Implementation Team (LIT). A number of subcommittees (Surveillance, Antimicrobial stewardship, Education, Infection Prevention and Control, Laboratory methods) contributed to the action plan for the region in 2009. The committee also funded the following:

- Surveillance: *C. difficile* typing project, enhanced surveillance study and a regional laboratory project to determine an optimum testing protocol for both *C. difficile* and MRSA.
- Information Technology: Purchase of dedicated server for surveillance projects, document-management software for hospitals, upgrading of IT hardware for microbiology laboratory and antimicrobial pharmacist.
- Health Promotion: Infection Control media campaign, patient information leaflets and hospital signage.
- Antimicrobial stewardship: Compilation, printing and distribution of new hospital antimicrobial prescribing guidelines. Participation in European point-in-time study of antimicrobial usage in hospitals.
- Upgrading of microbiology laboratory infrastructure in Our Lady of Lourdes Hospital
- Updating, printing and distribution of Regional Infection Control Guidelines.
- Education: Hand hygiene training equipment and educational tools purchased. Funding of regular educational talks given by external expert speakers to health-care workers re healthcare associated infections.

### 4.2 North West

Dr. Michael Mulhern replaced Dr. Anthony Breslin as chair in mid 2009. Version 3 of the Letterkenny General Hospital Antimicrobial Guidelines was published this year and the committee has recently launched Antimicrobial Guidelines for General Practitioners in Co. Donegal which cover common as well as serious community infections. A system is in place for the Regional analysis of data and data distribution to relevant authorities. The committee is severely restricted by the lack of access to a defined budget.

### 4.3 Dublin North

The committee is co-chaired by Dr. Fidelma Fitzpatrick and met quarterly in 2009. Mr. Brian Conlan replaced Ms. Angela Fitzgerald as co-chair in January 2009. LIT infection control meetings, attended by both co-chairs occurred every six to eight weeks where HSE dashboards, national and local surveillance data and relevant documentation from the NSARI and the regional committee were discussed. Committee activities in 2009 included, an audit of MRSA screening practices in the region, production of regional surveillance data to guide antibiotic prescribing (antibiotic susceptibilities on GP urines and sputum *S. pneumoniae*), review of regional and national antibiotic prescribing (hospital and community), review of regional EARSS data, production of an annual newsletter (2009 focussed on prevention and management of *S. pneumoniae* and respiratory infections) and the second annual Regional Educational Day for healthcare staff working in the community. The major concerns expressed in 2009 included governance and reporting relationships of the regional committee in light of HSE organisational changes, and gaps in dedicated infection control expertise in the community areas and in disability & residential settings. One dedicated infection control nurse was appointed in PCCC in Dublin North; however, no such post exists in the remaining two areas. In addition there is no formal consultant microbiologist community cover and the committee has recommended that this should be incorporated into future consultant posts.

### 4.4 Dublin South

Dr. Susan Knowles chairs the committee which meet quarterly in 2009. LIT structure does not involve HCAI in the region. SARI was represented at one LIT meeting in December 2008 but since then there has

been no active reporting arrangement. As LIT's nationally have been abolished, the committee is seeking clarification regarding the reporting relationship for regional SARI committees. NSARI and HCAI/AMR initiatives are recommended and prioritised by the committee and regional surveillance data is reviewed and distributed to relevant authorities.

While approximately half of community institutions have an infection control link nurse there is no dedicated infection control nurse specialist or microbiologist for the community. In terms of implementation of national guidelines, if a guideline has not been fully implemented in hospitals in the region, this is in general due to infrastructural deficiencies, but may also be due to lack of key staff such as antibiotic pharmacists or surveillance scientists. In non-acute settings there are a number of reasons for failure to implement certain aspects of national guidelines including lack of community infection control personnel, infrastructural and IT deficiencies. Although training and education occurs in all non-acute institutions, additional structured education is required; link nurses are in place in some institutions and could be linked in with a community infection control nurse (when appointed). The committee recommend the appointment of a dedicated infection control nurse for the community, hospital staff are not in a position to provide additional infection control cover for the non-acute institutions. The Committee plan to meet in early 2010, but further meetings awaits clarification of the reporting arrangements nationally.

#### **4.5 Dublin Mid Leinster**

The committee is chaired by Dr.Phil Jennings and meets on a quarterly basis.

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. A number of local initiatives commenced in 2009 including mandatory hand hygiene education and audit, establishment of antimicrobial stewardship committees and development of quality improvement programmes to meet HIQA infection prevention and control standards. A number of key posts (antibiotic pharmacist, laboratory scientist, surveillance scientist and infection control nurse specialists) have not been filled in the region due to the embargo on recruitment and replacement of staff. The committee has recommended increased on-site consultant microbiologist hours on some hospital sites. Limitations on the implementation of SARI include lack of key staff as outlined above, inadequate infrastructure (single rooms for isolation) and inadequate IT. The committee is concerned that the lack of SARI funding for additional posts or improvement plans towards implementing the SARI Strategy imposes an additional burden on already overstretched resources.

#### **4.6 West**

The Regional Infection Control Committee (RICC) is chaired by Prof Martin Cormican, and met once in spring 2009. The RICC was initially constituted on the basis of an agreement with the then Network Manager that he would participate in all of the meetings. However, since early 2009 with the reorganisation of HSE management structures the network manager post has been subsumed into the role of the office of the Regional Director of Operations (RDO). To date, the chair has been unable to establish a dialogue with the office of the RDO regarding views on management representation on the RICC. In terms of the basis on which the chair agreed to act as Chair, he has not been prepared to convene meetings without an agreed management input. Though hospitals in the region have progressed the prevention of HCAI and AMR agenda locally, at present there is no effective regional structure for infection control and little effective progress has been made in 2009 on a structured regional basis

#### **4.7 South East**

The RICC is chaired by Dr Maeve Doyle, and meets quarterly. Regional EARSS, regional surveillance data, hospital antimicrobial consumption and alcohol hand rub usage is reviewed on a regular basis and appropriate document control is in place at a regional level. Enhanced *C. difficile* surveillance commenced in October 2008 in acute/non-acute hospital patients and surgical site infection surveillance continues in Wexford General Hospital and commenced in South Tipperary General Hospital in December 2009. 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. Functioning Infection Prevention and Control Committees are established in the four acute hospitals in the region

and in the non-acute hospitals in Carlow/Kilkenny. However, most of the community committees have no infection prevention and control or microbiology personnel on the committee. A RICC sub-committee was established to look at infection control requirements in the PCCC. Education activities include those provided by the infection prevention and control teams, education for NCHDs, training of link nurses and participation in the peripheral line care bundle programme.

Limitations on further implementation of SARI in the region include gaps in specialist staff (consultant microbiologist, appropriately trained infection control nurse specialists, hospital antibiotic pharmacist, administrative support) in both hospitals and the community,

#### 4.8 South

The committee is chaired by Dr. Fiona Ryan, meets on a quarterly basis and continues to publish a regular newsletter. The chair and a consultant microbiologist (Dr. Bartley Cryan) participate in weekly LIT teleconferences and relevant national documents are circulated through the LIT. While there are functioning hospital infection control committees, in smaller acute hospitals there is a problem with appropriate membership (i.e., microbiologist, clinical consultant, specialist in public health medicine). Each of the five local health offices (LHOs) has established an infection control committee but only one has representation from infection control, microbiology and public health. The RICC is planning to establish a community infection control subgroup to provide support and co-ordination for the LHO committees. Local initiatives in 2009 included:

- AMR Surveillance subcommittee: production of a standard approach to testing and reporting antibiotic susceptibility (*S. pneumoniae*, *H. influenzae*), discussion on methods to screen and monitor AMR (a local report has highlighted an outbreak of a CTX-M resistant clone in the region), collection of regional urinary, respiratory and wound antimicrobial susceptibility data, production of a draft protocol for the collation, analysis and reporting of wound antimicrobial susceptibility data and development of a proposal for hospital-based enhanced *S. aureus* surveillance.
- Antimicrobial Stewardship Subcommittee: An antibiotic pharmacist commenced in Tralee General Hospital in March 2009. Antimicrobial guidelines for acute hospitals in the region that were developed in late 2008 have been adapted and implemented in regional hospitals. Ongoing antimicrobial consumption surveillance continues in most hospitals. Point prevalence surveys of antimicrobial use have been conducted in many hospitals and the region contributed to the ESAC Point Prevalence Survey in 2009.
- Projects Funded by the RICC included funding of Pharmacy IT systems in two hospitals, funding of a study on the prevalence and clinical impact of multidrug resistance in gram-negative bacteria, funding of infection control training courses for specialist staff and training materials for PCCC, support for the upgrade of laboratory and surveillance equipment and funding for the UCC health protection course

Limitations on the implementation of national guidelines highlighted include inadequate infrastructure and lack of adequate specialist (infection control nurse specialists, microbiologists, antibiotic pharmacists) and administrative staff.

#### 4.9 Mid West

The committee is chaired by Dr. Patrick O'Sullivan and meets on a quarterly basis. The chair attends monthly LIT meetings, which resumed in autumn 2009, and is joined by the consultant microbiologist to discuss HCAI/AMR issues

Local initiative included the instillation of an electronic infection control package in the MidWestern Regional Hospital (MWRH) to assist clinical surveillance and generate timely alerts in the event of the beginnings of an outbreak and the revision of antimicrobial stewardship guidelines. A regional newsletter is published three times yearly.

The committee has highlighted that the region is the one remaining region where CIDR has not been implemented in the public health department due to the lack of surveillance staff. The Senior Surveillance Scientist passed away July 2009 and has not been replaced as a result of the recruitment moratorium

and the surveillance officer's maternity leave was not filled. As a result there was no surveillance function in the regional Department of Public Health in 2009 and no system in place for the regional analysis and dissemination of HCAI/AMR data. In the acute services, the consultant microbiologist in MWRH feeds back HCAI/AMR data with hospital and GP colleagues. The infection control nurse specialists in Dooradoyle have developed a website where surveillance data is updated monthly.

The HR restrictions, with a resultant inability to recruit staff to fill essential posts and a failure to replace staff on maternity leave, etc., have had a huge impact on the regions capacity to implement SARI. Reconfiguration of hospital services in the Mid West is underway and the management of acute surgical emergencies from the whole Region was centralized in the MWRH in July 2009. There has been an increase in HCAI during 2009 and, in the context of the reconfiguration, the project team will be consulting with a UK Clinical Nurse Consultant to advise on nursing resources across the integrated care pathway; the goal being to eliminate preventable HCAI.

The publication of the HIQA standards in May 2009 has led the regional SARI Committee to review its functionality and consideration is being given to forming a new committee for the region that serves both SARI and these new standards, a Regional Infection Prevention and Control Committee.

## Appendix 1: Members of the National Committee – December 2009

**Chair:** Dr. Olive Murphy, Consultant Microbiologist, Bon Secours Hospital, Cork (4/4)\*

**Hon. Secretary:** Dr. Fidelma Fitzpatrick, Consultant Microbiologist, HPSC & Beaumont Hospital, Dublin. (4/4) \*

**Secretariat:** Ms. Siobhan Dowling, HPSC (4/4) \*

### **Chairs of SARI Regional Committees:**

1. **Dublin North:** Mr Brian Conlan, Chief Executive, Mater Hospital, Dublin (1/4)\* joined Sept 09 & Dr. Fidelma Fitzpatrick, Consultant Microbiologist, HPSC and Beaumont Hospital, Dublin (co-chairs) (4/4)\*
2. **Dublin South:** Dr. Susan Knowles, Consultant Microbiologist, National Maternity Hospital, Dublin. (3/4) \*
3. **Dublin Mid-Leinster:** Dr. Phil Jennings, Director of Public Health, Department of Public Health, HSE - Midland Area, Tullamore. (3/4) \*
4. **South East:** Dr. Maeve Doyle, Consultant Microbiologist, Waterford Regional Hospital. (3/4) \*
5. **South:** Dr. Fiona Ryan, Public Health Specialist, HSE-South. (3/4) \*
6. **MidWest:** Dr. Patrick O'Sullivan, Public Health Specialist, HSE Mid-Western, Limerick. (3/4) \*
7. **West:** Professor Martin Cormican, Consultant Microbiologist, University College Hospital, Galway (1/4) \*
8. **NorthWest:** Dr. Michael Mulhern, Consultant Microbiologist, Letterkenny General Hospital. joined December 09 (1/4) \*
9. **NorthEast:** Dr. Rosemary Curran, Consultant Microbiologist, Our Lady of Lourdes Drogheda, Co. Louth (3/4) \*

**Irish Patients Association:** Mr. Stephen McMahon (2/4) \*

**The Consumers Association of Ireland:** Ms Dorothy Gallagher (2/4) \*

**Department of Health and Children:** Dr. Collette Bonner (1/4) \*

### **HSE:**

Dr. Kevin Kelleher, Assistant National Director for Health Protection, Population Health (3/4) \*

Dr. Paul Kavanagh, National Hospitals Office Resigned mid-2009. (1/4) \*

### **HPSC:**

Dr. Robert Cunney, Consultant Microbiologist, HPSC and Temple Street Children Hospital (4/4)\*

Shelia Donlon, Infection Control Nurse Manager, HPSC (4/4)\*

**HIQA(observer):** Dr. Deirdre Mulholland (1/4) \*

**Infection Prevention Society:** Ms Breda Corrigan, Infection Control Nurse Specialist, Midlands General Hospital, Tullamore (3/4) \*

**Surveillance Scientist Association:** Ms. Karen Logan, Surveillance Scientist, Sligo General Hospital(3/4) \*

**Royal College of Physicians of Ireland:** Dr Lynda Fenelon, Consultant Microbiologist, St Vincent's University Hospital, Dublin (3/4) \*

**Academy of Medical Laboratory Science:** Ms Anne-Marie Meenan, Coombe Women's and Infants University Hospital, Dublin. Resigned March 09

**Irish Pharmaceutical Healthcare Association:** Dr Rebecca Cramp (1/4) \*

**Hospital Pharmacist Association of Ireland:** Ms Deirdre Lynch, Cork University Hospital, Cork (2/4) \*

**Pharmaceutical Society of Ireland:** Ms Marita Kinsella (0/4) \*

**Faculty of Veterinary Medicine:** Dr Nola Leonard, Dept Veterinary Medicine, UCD(2/4) \*

**Department of Agriculture and Food:** Dr. John Egan, Central Veterinary Research Laboratory, Co. Kildare (3/4) \*

**Irish College of General Practitioners:** Professor Colin Bradley, Dept General Practice, University College Cork (2/4) \*

**Faculty of Pathology:** Professor Martin Cormican, University College Hospital, Galway (1/4) \*

**Chair, Antimicrobial Stewardship:** Dr. Edmond Smyth, Consultant Microbiologist, Beaumont Hospital 0/4\*

**CEO Group:** Ms. Margaret Swords, Deputy CEO/Head of Operations, Beaumont Hospital (1/4) \*

**Dental:** Dr. Nick Armstrong, Principal Dental Surgeon, Dublin Mid-Leinster. (3/4)\* joined June 09

\* Number of meetings attended /number held in 2009

## Appendix 2: Summary of NSARI Meeting to discuss HSE Laboratory Modernisation, August 2009.

### Issues Discussed:

#### 1. Microbiology Departments provide a service rather than simply perform tests

The service that the microbiology laboratory provides includes close liaison with clinician users in terms of appropriate investigations to perform, appropriate antibiotic prescribing and appropriate infection control precautions to institute in order to prevent spread of organisms associated with healthcare-associated infection (e.g., MRSA, *Clostridium difficile*). The laboratory is also a key link with public health specialists and has an essential role in antimicrobial resistance surveillance. The HSE has prioritised the development of the primary care strategy and the microbiology laboratory is a good example of tight hospital: community communication. Consultant Microbiologists serve as a key link person for GP's and other health care professionals in the community. Good communication ensures that only appropriate tests are performed (pre- analytical) and that important positive results are communicated by phone the day they become positive (post-analytical) (e.g. *Clostridium difficile*, MRSA, group A streptococci). Interpretative reporting ensures that users get an appropriate service – they do not simply get a laboratory result, rather, one that is interpreted in the context of the type of specimen and more importantly the patient. Antibiotic susceptibilities are not released for every organism isolated thereby preventing overuse of inappropriate antibiotics.

The service provided by the microbiology department can be divided into the following areas:

- **Pre-analytical** Advice sought from users regarding the optimum specimen/s or the first line tests which might yield diagnosis, with reservation of additional requests pending these results and consequent cost-saving, if not required.
- Supervision of **analytical** phase.
- **Post analytical** interpretation of results. This included
  - Alerting clinicians by phone to urgent results and advising on treatment options and/or infection control precautions.
  - Review of results and decision regarding appropriate antibiotic susceptibilities to be released. A selection of routine reports and the antibiotic susceptibilities reported/repressed and advice given were presented and discussed (Appendix).
  - Review of individual patient's previous reports in order to guide appropriate prescribing.

Examples of interpretative reporting that commonly is sent from the community were discussed including;

- Urinary catheter reports where no antimicrobial susceptibilities are released with the report (though the laboratory will have done this – essential for antimicrobial resistance surveillance) and an interpretative comment states that as the patient has a urinary catheter, that the culture result most likely represents colonisation and antibiotic therapy is not indicated unless the catheter is changed, instrumentation planned or the patient is systemically unwell.
- MRSA nasal screen: As above while the laboratory performed antimicrobial susceptibilities, mupirocin susceptibility only is released. An interpretive comment on this report gives advice on infection control precautions (including decolonisation and mupirocin use) and recommends that the patient or next of kin is informed of the result.
- Leg ulcer swab where multiple isolates were grown, however, no further work was performed by the laboratory. An interpretative comment was added to the report suggesting that unless the patient had cellulitis/soft tissue infection that these isolates most likely represent colonisers and asking the user to contact the department to request susceptibilities and to discuss treatment if clinically indicated. This was an example of saving both time and money by not processing non significant isolates.

- Extended spectrum  $\beta$ -lactamase (ESBL) producing *E. coli* isolated from a catheter urine. Again while the laboratory performed antimicrobial susceptibilities they were not released and an interpretative comment was added issuing infection prevention and control advice and also stating that as this is a urinary catheter urine that this is likely a contaminate.

Close liaison between the microbiology laboratory and users in both the community and the hospital saves money. It ensures that non-appropriate specimens are not processed, avoids unnecessary hospital admissions (by appropriate early treatment of patients with the correct antibiotic), prevents the emergence of antimicrobial resistant organisms by inappropriate prescribing and prevents further cross infection via institution of appropriate infection control precautions in a timely fashion.

## **2. Fragmentation of laboratory services**

The microbiology laboratory service must be patient-centred in order to ensure high quality patient care. Fragmentation of information pertaining to each patient is not ideal. One of the concerns with dividing microbiology laboratory testing into laboratories testing community specimens and those testing hospital specimens is that there is the potential that appropriate results are not communicated to / accessed by appropriate professionals in the other sector. This could potentially result in patients being prescribed inadequate therapy or patients with multiresistant organisms such as MRSA not being isolated/cohorted putting other patients at risk. A mechanism for ensuring that Microbiologists can see both hospital and community results for the patient is essential. A recent high profile court case, where a patient had undergone surgery without their MRSA status being identified, despite previous documentation of MRSA colonisation in a different laboratory nearby, was cited.

Therefore, any new laboratory model should be patient-centred necessitating an optimum IT system with different sections of laboratory system linked together to ensure continuity of care. An integrated national laboratory IT system is needed with unique patient identifiers (e.g. PPS number) to ensure that healthcare professionals can access all the patients appropriate microbiology results regardless of which laboratory the specimens were processed in. A properly linked IT system is also essential to avoid duplication of tests (leading to cost savings) and would allow appropriate antimicrobial resistance surveillance in order to inform the HSE of emerging trends such as the mupirocin resistant MRSA trend that was discussed.

While it is agreed that rationalisation of microbiology services is needed, unless laboratories are set up to include appropriate clinical liaison of pre and post analytical phases of testing the patient in the end will suffer. A division of testing between hospitals and the community appears to be artificial and without the close liaison e.g. IT system and appropriate clinical interpretative reporting that this system will disadvantage the patients which are our primary users.



## Appendix 3: Links to Relevant SARI Documents

### **NSARI, working groups and SARI regional committee membership lists and key documents:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/StrategyforthecontrolofAntimicrobialResistanceinIrelandSARI/>

### **Detailed results of EARSS and the enhanced bloodstream infection surveillance system:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanAntimicrobialResistanceSurveillanceSystemEARSS/>

### **Regional and Hospital S. aureus bacteraemia Surveillance:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanAntimicrobialResistanceSurveillanceSystemEARSS/ReferenceandEducationalResourceMaterial/SaureusMRSA/LatestSaureusMRSAdata/>

### **Antimicrobial Consumption Surveillance:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/EuropeanSurveillanceofAntimicrobialConsumptionESAC/>

### **Hand Hygiene Guidelines, Audit Tool, Alcohol hand rub consumptions surveillance and relevant links:**

<http://www.hpsc.ie/hpsc/A-Z/Gastroenteric/Handwashing/>

### **Hospital Antibiotic Stewardship Guidelines, December 2009:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/StrategyforthecontrolofAntimicrobialResistanceinIrelandSARI/AntibioticStewardship/Publications/>

### **National guidelines on the prevention, surveillance, diagnosis and management of intravascular catheter-related infection:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHealthcare-AssociatedInfection/IntravascularIVlines/Publications/>

### **Surgical site infection surveillance:**

<http://www.hpsc.ie/hpsc/A-Z/MicrobiologyAntimicrobialResistance/SurgicalSiteInfectionSurveillance/>