

Infection Control Annual Report 2009

Produced by

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Introduction:

At Royal Victoria Eye and Ear Hospital (RVEEH) we aim to promote a healthy and safe environment by preventing transmission of infectious agents among patients, staff and visitors. This is accomplished by constantly monitoring our services, consulting with patients, visitors and staff, and modifying our services based on feedback, internal evaluations, regulations, standards, scientific studies and guidelines.

In the current climate of budgetary constraints, the Infection Prevention and Control Team (IPCT) endeavours to provide their services in an efficient and cost-effective manner. The team consists of Dr Susan Knowles, Consultant Microbiologist, Ms Sinead Fitzgerald, Infection Control Nurse (0.5 WTE) and Ms Margie McCarthy, Infection Control Nurse (0.5 WTE). Administrative assistance of ten hours per week was withdrawn from the service in 2009 due to financial cutbacks.

The team meets twice weekly to discuss all matters relating to Infection Control in the hospital and the Infection Control Committee meets quarterly. In December 2009 Ms Grace Cooke took over as chair of the Infection Control Committee. For membership and terms of reference of the Infection Control Committee see Appendix 1. Additionally the infection control team is now represented on the Drugs and Therapeutics' committee, which is responsible for antimicrobial stewardship *inter alia*.

Surveillance

Surveillance involves a range of procedures including scientific, technical, communication, information/computer and data management, and quality control. A surveillance work plan is part of the Infection control programme set up annually by the IPCT and approved by the Infection Prevention and Control committee (IPCC)

The Health Service Executive (HSE) healthcare associated infection (HCAI) governance group has set the following goals and objectives: to reduce HCAI by 20%, to reduce MRSA infections by 30% and to reduce antibiotic consumption by 20%

Table 1: Targets/ key performance indicators for RVEEH.

HCAI Key Performance Indicators (KPI)	Targets	KPI RVEEH 2009
Rate of post-operative endophthalmitis	≤0.5%	0%
Number of RVEEH acquired MRSA colonization	≤4	1
Number of RVEEH acquired MRSA infection	≤2	0
Number of MRSA blood stream infections	≤1	1
Vancomycin resistant enterococcus blood stream infections	≤1	0
<i>Clostridium difficile</i> Infections	≤2	0
Norovirus Outbreaks	≤1	0

HCAI is defined as any infection that was not present or incubating on admission

Surveillance in the RVEEH includes the following

- Antimicrobial resistance
- Surgical Site Infections
- Patient device related infections
- Notifiable infectious diseases
- Hospital acquired infections.

Infection No's	2009	2008	2007	2006
Adenovirus	14	29	44	11
Acanthamoeba	2	2	2	1
Campylobacter	1	1	0	1
Chlamydia	11	14	13	10
C. difficile	0	2	0	0
Gonorrhoea	1	0	2	1
Gp A Strep	12	15	8	9
Hepatitis B	1	0	0	1
Hepatitis C	1	0	0	1
MRSA (non-invasive)	77	91	94	75
MRSA (invasive)	1*	0	0	0
Mumps	4	3	1	4
Norovirus	0	0	1	0
Syphilis	3	0	0	0
Toxoplasmosis	2	0	0	0
TB Pulmonary	0	0	0	2
TB Non-pulmonary	4**	0	0	1
VRE	0	0	0	0
Total	134	154	165	115

* MRSA not acquired in RVEEH.

** 2 micro confirmed, 2 based on histology findings

MRSA

In 2009 563 patients were screened for MRSA. Of these 77 (13.7%) were found to be positive. 76 (98.7%) of these cases were community acquired and one was deemed to be possibly hospital acquired (1.3%), as the patient had not been screened on admission. MRSA de-colonisation was carried out on 30 patients in 2009 prior to their surgery. Eradication was not successful on seven patients. However surgery was not cancelled and all appropriate precautions were taken. A patient who was transferred from another hospital and was a known MRSA carrier was treated for an MRSA blood stream infection. There were no other MRSA blood stream or wound infections identified in 2009.

Influenza A (H1N1) Swine flu

The IPCT implemented the recommendations of the Health Protection Surveillance Centre (HPSC) during the pandemic of 2009. There were no recorded cases admitted to the RVEEH. The Occupational Health department conducted the vaccination programme according to HSE directives.

EARSS

The RVEEH Microbiology Laboratory contributes information to the European Antimicrobial Resistance Surveillance System (EARSS). In 2009, there was 1 *Staph aureus* (MRSA) *blood stream infection and no E. coli, S. pneumoniae, Enterococcus, K. pneumoniae or P. aeruginosa* blood stream isolates.

Surgical Site Infection/Patient Device

There was one incident of surgical site infection reported in 2009. There were two reported cases of peripheral intravenous (IV) device related infections. Both were treated appropriately.

Number and type of surgeries carried out in RVEEH

	2007			2008			2009		
	Total	Infected	%	Total	Infected	%	Total	Infected	%
EYE SURGERY									
Cataract Surgery	1586	2	0.13 %	1439	2 (Hampton)	0.14%	1448	0	0%
Other Eye Surgery	3171	0	0%	4538	0	0	2759	1	0.03%
Total eye surgery	4757	2	0.04	5977	2	0.03%	4207	1	0.02%
ENT SURGERY			%						%
Thyroidectomy	40	1	2.5 %	49	0		27	0	0%
Parotectomy	3	0		17	1	5.9%	15	0	0%
Neck Dissection	4	0		10	1	10%	3	1	33%
Laryngectomy	2	0		4	0	0%	1	0	0%
Mastoid Exploration	59	1	1.7 %	63	1	1.6%	65	0	0%
Septoplasty	39	0		35	1	2.9%	45	0	0%
Tympanoplasty	26	0		25	1	4%	26	0	0%
Submental Excision	18	1	5.6 %	21	0				
Other ENT surgery	1680	0		1618	0		1574		
	<u>1871</u>	<u>3</u>	<u>0.16 %</u>	<u>1842</u>	<u>5</u>	<u>0.27%</u>	<u>1756</u>	<u>1</u>	<u>0.056%</u>

There were no reports of significant increases in other communicable diseases.

Audits

Internal Audits

Regular audits of infection control practice are carried out by the IPCT. These include the bi-annual Infection Control Audit which monitors the following aspects of patient care:

- Management of patient equipment
- Care of peripheral IV lines
- Handling and disposal of sharps
- Use of personal protective equipment
- Waste handling and disposal

Results are fed back to each department head and Quality Improvement Plans (QIPs) are developed to deal with issues that cannot be resolved immediately.

Hand Hygiene

Observational hand hygiene audits are carried out bi-annually. In 2009 the Health Protection Surveillance Center (HPSC) developed an observational hand hygiene audit tool in order to standardise audits in all areas of health services. Reports from hand hygiene audits will now be fed back to the HPSC and strict criteria as to acceptable results will be applied. Re-auditing will be mandatory until desired compliance levels are achieved.

Hand hygiene observational audits were carried out in Nov 09 by the IPCT using the HPSC newly developed audit tool. The overall rate of compliance for the hospital was 64.4%, which is poor. For 2009, the HSE has set 75% compliance as acceptable. Acceptable compliance targets will increase each year. Each ward and department will be re-audited in early 2010.

External Audits

HIAQ

The Health Information Quality Authority (HIQA) published the Standards for the prevention and control of HCAI in the May 2009. A self-assessment audit tool was completed by the IPCT to provide evidence of compliance with each of the twelve standards. This self-assessment was submitted to the HSE in November with a gap analysis and list of outstanding Quality Improvement Plans, which have to be completed before 100% compliance, is achieved. The hospital achieved an overall score of 81% on the self-assessment audit tool. Also submitted was evidence of good practices currently carried out in the RVEEH for review by our peers. A total of 62 Quality Improvement Plans (QIPs) were submitted, of which 30 have so far been completed.

Additionally the IPCT completed the HIQA self-assessment audit regarding Hygiene Standards. This audit monitors all aspects of compliance with the HIQA hygiene standards both from corporate management and service delivery aspects. The hospital scored 83% in the self-assessment on hygiene standards. External auditors are expected to visit the hospital to review compliance.

Alcohol hand gel consumption audit

The Health Protection Surveillance Centre (HPSC) audits the annual usage of alcohol hand gel in all hospitals. This is used as an indication of compliance with hand hygiene and usage is compared with other hospitals by use of a decile score. The total usage for the RVEEH for 2009 was 164 litres. This represented an increase of 17 litres on the

figure for 2008 and compares favourably with other hospitals in our network. See Appendix 3.

Antimicrobial Consumption Data Audit

The RVEEH reports data on antimicrobial consumption to the HPSC annually.

Hospital Name	Measure	2007	2008	2009 (Q1&Q2)
RVEEH	DDD/100BDU*	75.63	55.75	62.13

***DDD**-daily defined doses.

BDU-

bed days used

See Appendix 2 for more detail

Occupational Blood and Body Fluid Exposures (OBEs)

There were 13 reported cases of Occupational blood and body fluid exposures in 2009. Of these 12 were sharps injuries and one was exposure from an eye splash. All of these cases were followed up in accordance with the hospital's policy on Occupational blood and body fluid exposure. All staff are reminded of the importance of adhering to the hospital policy on the safe handling and disposal of sharps at all times in order to reduce the risk of injury and infection.

Facilities

Upgrading work was carried out in many areas of the hospital in 2009.

- The Harvey Lewis Wing (HLW) was completely redecorated including new floor covering and painting throughout.
- The waste holding area to the rear of the hospital was also upgraded in order to meet HIQA standards.

- A new autoclave was purchased for the Operating Theatre and is due to be installed early in 2010.

Some areas of concern to the IPCT are:

Hand Hygiene Facilities:

Many areas in the hospital do not have the appropriate number of hand hygiene sinks as recommended by the Strategy for Control of Antimicrobial Resistance in Ireland (SARI) Guidelines for Hand Hygiene in the Irish Health Care Setting (2007). Furthermore, some existing sinks do not conform to an appropriate design standard for sinks in healthcare settings. Funding has been requested from the HSE for a sink upgrade project. The IPCT recommends the use of alcohol hand gel in areas where there are insufficient hand washing sinks.

Operating Theatres Ventilation: The ventilation system in the operating theatres does not meet internationally recognised standards. This increases the risk of post-operative infection. The situation has been highlighted to the Hospital Management Group (HMG) and the Medical Board numerous times in the past. The HSE is also aware of the lack of conventional ventilation in the Operating Theatres. No funding has been made available. The IPCT recommends that all Operating Theatres should have appropriate ventilation with a minimum of 20 air changes per hour. The instrument set-up area should be dedicated for use, have 35 air changes and an appropriate pressure differential with adjacent rooms.

Traceability: The need for an adequate traceability system for re-usable invasive medical devices (RIMD) was highlighted again in December 2009 by an incident involving a patient with suspected Creutzfeldt-Jacob disease (CJD). At present there is no

way of tracing an instrument directly to a patient and this poses an infection control risk. A proposal has been made and funding has sought for this.

Endoscopy procedures: The IPCT would once again like to point out that the decontamination of endoscopes is not being carried out in accordance with international best practice guidelines. Decontamination of used endoscopes should be carried out in a centralised, dedicated area in the hospital, separate from patient treatment areas. All endoscopes should be processed using an automated endoscope reprocessor (AER) and should be stored in appropriate units after decontamination. Current facilities and practices are of concern and should be addressed as a matter of urgency. This issue has been brought many times to the HMG.

Isolation rooms:

The RVEEH does not have an isolation room with en-suite facilities. Funding has been requested and the matter has been brought to the attention of HMG. The IPCT reiterates the importance of proper isolation facilities in preventing the spread of infection in the hospital environment.

Environmental Monitoring

Water Quality & Legionella Prevention: The Health Protection Surveillance Centre (HPSC) published National Guidelines for the Control of Legionellosis in Ireland in 2009. The new guidelines recommend environmental monitoring. This is carried out quarterly in the RVEEH. A full legionella risk assessment was carried out in 2008 and recommendations were made. The hospital's infection control guidelines on prevention of legionella were updated to reflect the new national guidelines and these were disseminated to all staff. Weekly monitoring of water temperatures is carried out in the hospital and temperatures out of accepted ranges are acted on without delay. Regular

hyperchlorination occurs. Environmental monitoring is an agenda item for the quarterly infection control committee meeting.

Policies, Procedures and Guidelines updated in 2009

- Standard and Transmission Based Precautions
- Guideline on Management of Scabies
- Amendments on C diff and Norovirus
- Glucometer decontamination management
- Urinalysis Testing Guideline
- Guideline on the Management of an Outbreak
- Decontamination for Re-Usable Invasive Medical Devices
- Surveillance Programme 2010,
- Guideline on the Management of patients requiring transmission based precautions in the RVEEH.
- Prevention of Aspergillosis guideline
- Policy on development and control of Hospital Guidelines and Policies
- IPCC terms of reference

Appendix1

Membership of Infection Control Committee

Hospital CEO.....	Grace Cooke
Consultant Microbiologist.....	Dr Susan Knowles
Surgeon.....	Dr Andre Bobart
Infection Control Nurse.....	Sinead Fitzgerald
Infection Control Nurse.....	Margie McCarthy
Risk Manager.....	Sarah McCarthy
Health and Safety Officer.....	Deirdre Kelly
Theatre Manager.....	Linda Harris
Pharmacist.....	Jane Anne O Connor
Surveillance Scientist	Meriel Matheson
HSSD Manager.....	Carol Gaskin
Catering Supervisor.....	Ann Gillick
Nursing/CNM.....	Maura Carroll
Staff Nurse.....	Mary McAree
CNM 2 OPD.....	Ann Marie Flynn
Assistant DON.....	Mary Casey

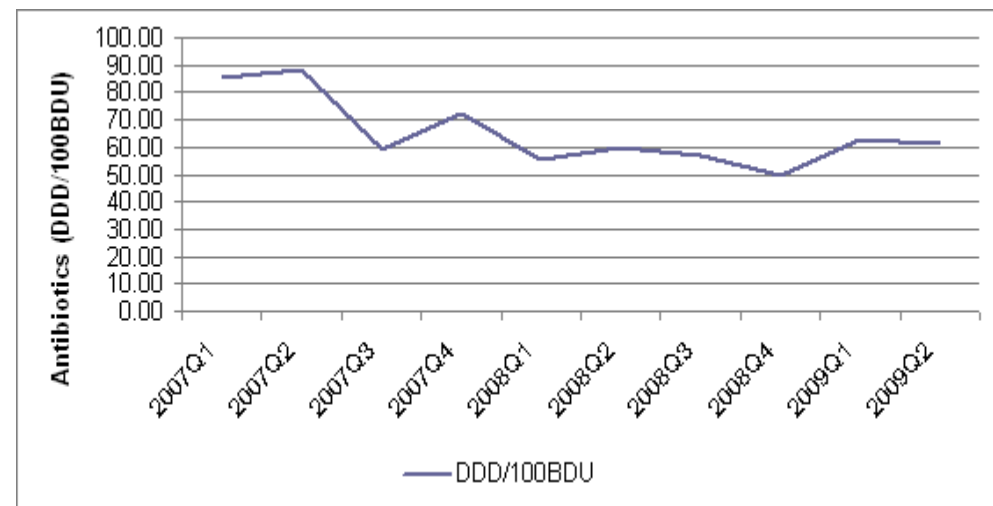
Appendix 2

Section B1. Total Consumption		Antibiotics (DDD/100BDU)			
<i>Data for 2009 are for Q1&Q2 only</i>					
<i>Rate is DDD per 100 bed-days used</i>					
HospGroup	Measure	2007	2008	2009	Difference
G_H17	DDD/100BDU	75.63	55.75	62.13	10%
HospGroup	Measure	2007	2008	2009	
G_H17	ABDecile		2	2	
G_H17	ABNatCount		42	40	
G_H17	ABNatMedian		76.39	75.48	

Difference between 2008 and 2009Q1Q2

*Decile scores
Number of hospitals with valid data
National medians*

HospGroup	Measure	Period	DDD/100BDU
G_H17	DDD/100BDU	2007 Q1	85.17
G_H17	DDD/100BDU	2007 Q2	88.42
G_H17	DDD/100BDU	2007 Q3	59.09
G_H17	DDD/100BDU	2007 Q4	72.08
G_H17	DDD/100BDU	2008 Q1	55.66
G_H17	DDD/100BDU	2008 Q2	60.13
G_H17	DDD/100BDU	2008 Q3	57.18
G_H17	DDD/100BDU	2008 Q4	49.35
G_H17	DDD/100BDU	2009 Q1	63.01
G_H17	DDD/100BDU	2009 Q2	61.24



Appendix 3 Alcohol Hand Rub Consumption in Acute Irish Hospitals Report

	Previous years			Previous three quarters			Current quarter
	2006	2007	2008	Q4 08	Q1 09	Q2 09	Q3 09
No. of participating hospitals	52	50	50	50	48	44	36
Bed Days used (BDU's)	10,368	8,824	8,950	1,982	2,015	2,010	1,544
Total vol hand rub used	76	311	147	34	32	21	43
(a) Quarterly rate vol/1000BDU	7.3	35.3	16.5	17.2	16	10.2	27.7
National Median vol/1000BDU's	11	15	18.7	18.9	18.7	17.7	24.5
(b) Your decile score	8	1	7	6	7	10	4
% of Hospitals used for decile score	100%	100%	100%	100%	98%	90%	73%
(c) Rolling avg rate				16.5	16.1	16.2	17.2

67.6 litres of alcohol rub were used in Q4 09' in the RVEEH.

<p>a. The quarterly rate of usage is the total volume of alcohol hand rub consumed in the current quarter (in litres) per 1,000 bed days used.</p>
<p>b. To get the decile score, the total number of hospitals are sorted by their quarterly rate and then divided into 10 groupings. Hospitals with a decile score of 10 have the lowest consumption rate and 1 have the highest rates in the sample. All decile scores above 8 are highlighted in RED – These indicate a low consumption rate compared to the national sample taken. Please note that different numbers of hospitals were used to estimate the decile score over time, therefore decile scores across years not directly comparable.</p>
<p>c. The rolling average rate is calculated as the average rate of hand rub usage over the previous four quarters to smooth out short-term variances and highlight longer term trends. This average could only be calculated from Q4 2008</p>

onwards because of data availability.

Report Sign Off Section :

Signature: _____

Title : _____

Date _____

Signature: _____

Title : _____

Date _____