



THE ROYAL VICTORIA  
EYE AND EAR  
HOSPITAL DUBLIN  
LOOKING AFTER THE NATION'S EYES AND EARS SINCE 1897

# Royal Victoria Eye & Ear Hospital

## Infection Control Annual Report

### 2023

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## Title: Executive Summary

### Introduction:

This report aims to inform and assure patients and staff about the infection prevention and control measures implemented at RVEEH (Royal Victoria Eye and Ear Hospital) throughout 2023. The report highlights key findings, including surveillance data on Healthcare Associated Infections (HCAIs) and measures taken to prevent their occurrence.

### Key Findings in 2023:

In 2023, there was only a single instance of hospital-acquired infection (*C. difficile*), demonstrating the efficacy of infection prevention and control protocols at RVEEH.

**Post-Cataract Endophthalmitis Rate:** The post-cataract endophthalmitis rate for RVEEH was 0.066%, with none of these cases being microbiologically confirmed. This suggests a low incidence of post-operative infections among cataract patients.

**Post-Intravitreal Injection Endophthalmitis:** The incidence of post-intravitreal injection endophthalmitis was 0.01%, with only one case being microbiologically confirmed.

**Absence of Hospital-Acquired MRSA, VRE, or CPE Infections:** There were no reported cases of hospital-acquired infections relating to MRSA (Methicillin-Resistant *Staphylococcus Aureus*), VRE (Vancomycin-Resistant Enterococci), or CPE (Carbapenemase-Producing Enterobacteriaceae) throughout 2023.

**Ocular Acanthamoeba:** While the incidence of ocular Acanthamoeba infections was lower than in 2022, the number of positive cases remained significantly higher than in previous years, suggesting ongoing vigilance and monitoring are necessary to address this concern.

**Compliance with Guidelines:** Ongoing hand hygiene audits, infection control audits, and antimicrobial stewardship inspections indicate very good compliance with both local and national guidelines. Hand hygiene audit results are submitted to the HSE (Health Service Executive) and published nationally, demonstrating transparency and accountability.

**JCI Accreditation:** The hospital prepared for Joint Commission International (JCI) accreditation in 2023, with the audit taking place in January 2024. RVEEH successfully achieved accreditation, reflecting its commitment to maintaining high standards of care and safety.

### Conclusion:

The findings of this report highlight the effectiveness of infection prevention and control measures at RVEEH in 2023. Despite the challenges that COVID-19 pandemic, the hospital demonstrated strong compliance with guidelines and achieved JCI accreditation. Continued vigilance and improvement efforts will be essential to sustain these positive outcomes in the future.

## 1.0 Introduction:

Healthcare-associated infections (HCAs) pose significant risks to patient safety and satisfaction. As such, preventing HCAs remains a top priority at our hospital. The Infection Prevention Control Team (IPCT) is dedicated to promoting evidence-based best practices in infection prevention and control (IPC) to ensure patient safety. The challenges posed by the ongoing Covid-19 pandemic underscore the importance of IPC as a shared responsibility among all staff members.

This is achieved through:

- Establishing effective governance structures with clear lines of accountability and oversight, ensuring all staff members understand their responsibilities and reporting channels (refer to the RVEEH Governance algorithm in the appendix).
- Providing necessary resources to support the delivery of quality care and services to patients.
- Developing an annual IPC program and work plan, subject to yearly review (refer to appendix 1).
- Creating and implementing evidence-based IPC policies and procedures to provide consistent guidance to staff across all disciplines.
- Continuously monitoring services and consulting with relevant staff disciplines.
- Fostering strong working relationships across clinical services and directorates.
- Maintaining and reviewing the Infection Control Risk Register (refer to Table 1 below).

By adhering to these principles and practices, we aim to mitigate the risk of HCAs and ensure the safety of both patients and staff members at RVEEH.

Table 1: Infection Control Risk Register

**Table 1: Infection Control Risk Register**

Risk	Risk to Whom	Risk Rating	Risk Category
1 Ventilation in OT	Patient//Staff	20	High
2 Legionella control	Patient//Staff	8	Moderate
3 Hand Hygiene Sinks	Patient//Staff	6	Moderate

*The risk associated with a shared treatment and clean utility room was removed from the risk register in 2023. See Appendix 2 for Analysis of Risk Register*

## **Standard 1: The prevention and control of Healthcare Associated Infections is effectively and efficiently governed and managed.**

### **1.1 Governance**

The RVEEH has established clear governance, management, and formalized support systems to ensure the sustained delivery of safe and effective infection prevention and control (IPC) and antimicrobial stewardship.

**Overall Accountability:** The CEO holds ultimate accountability and responsibility for the prevention and control of healthcare-associated infections (HCAIs) within the hospital.

**IPCT Structure:** The IPC service is executed by a specialized team known as the Infection Prevention and Control Team (IPCT). This team reports to the Infection Prevention and Control Committee (IPCC). The IPCT comprises a Consultant Microbiologist and two Clinical Nurse Specialists who share a 1.5 Whole-Time Equivalent (WTE) post. Additionally, in July 2022, a microbiology specialist registrar was added to the team, operating as a joint post with the National Maternity Hospital (NMH). Moreover, a Surveillance Scientist, stationed in the microbiology laboratory at NMH, contributes to the surveillance service at RVEEH.

This structured approach ensures that RVEEH maintains a proactive stance in preventing and controlling HCAIs, thereby safeguarding the safety and well-being of both patients and staff members.

*See appendix 4 for IPCC terms of reference.*

The IPCT has representation on the following committees.

- Infection Prevention & Control Committee (IPCC)
- Medical board committee
- Drugs Therapeutics & Antimicrobial Stewardship Committee (DTAMS)
- Risk, Health & Safety Committee
- Quality and Safety Committee
- Facilities & Medical Equipment Committee
- Deteriorating Patient Committee
- Sustainability Committee
- External Committees that ICPN sits on: Infection, Prevention, and Control Ireland, IEHG SSIS committee, IEHG HCAI / AMR committee.
- External Committees that Consultant microbiologist is a member of: IEHG HCAI / AMR committee; HSE AMRIC Expert Advisory group – [www.antibioticprescribing.ie](http://www.antibioticprescribing.ie) (2020-); HSE HPSC Syphilis outbreak control team; HSE NWIHP and RCPI IOG: Guideline Development Group for the Clinical Practical Guideline (CPG) on Group B Strep in Pregnancy; HSE NWIHP and RCPI IOG: Guideline Development Group for the Clinical Practical Guideline (CPG) on VZV in Pregnancy

The Infection Prevention and Control Committee (IPCC) at RVEEH is chaired by the hospital's Clinical Director. This committee operates as a multidisciplinary team, convening quarterly to oversee and coordinate efforts aimed at reducing the risk of infection within the hospital. Additionally, the committee is responsible for devising strategies to minimize the impact of infections on patients, visitors, and staff in the event of an outbreak.

By maintaining a proactive and collaborative approach through the IPCC, RVEEH demonstrates its commitment to prioritizing infection prevention and control, thereby enhancing the overall safety and well-being of all individuals within its care.

See Appendix 3 and 4: Committee membership, attendance, and Terms of Reference 2022

## 2.0 Surveillance

**Structures, systems and processes are in place to effectively manage and implement the IC programme to Prevent and Control Healthcare Associated infections.**

**Microbiological services are available in a timely and effective manner to support the service to prevent and control Healthcare Associated infections.**

Surveillance Program: The hospital's surveillance program indicates very low rates of HCAs, reflecting the effectiveness of the IPC measures implemented by the IPCT.

Surveillance involves a range of procedures including scientific, technical, communication, data information management and quality control.

**Table 2: HSE KPIs for RVEEH**

RVEEH KPIs	2019	2020	2021	2022	2023
Staph aureus blood stream Infection per 1000 bed days used (BDU)	0	0	0	0	0
HCAI C. difficile infection per 10,000 BDU	4.5	0	0	0	2.6
Antibiotic consumption (daily defined doses per 100 BDU)	47.9	40.5	40.1	56.2	40.0 (Q1-2 2023)
HSE hand hygiene audit compliance (≥90%)	May 90% Nov 91%	Nov 91.5%	May 93% Nov 90%	May 90% Nov 89.5%	May 89% Nov 91%
New CPE cases	1	0	0	0	0
Hospital-acquired COVID-19 cases	n/a	0	0	0	0

Hospital outbreaks	0	1 staff C-19 outbreak	2 staff C-19 outbreaks	0	0
Meropenem prescribed (gram)	1G	zero	92G	zero	46G

Surveillance in RVEEH includes monitoring the following.

- Healthcare-associated infection (HCAI)
- Surgical site infection (SSI)
- Patient device related infection
- Sepsis and blood stream infection
- Antimicrobial resistance
- Notifiable infectious diseases
- Respiratory like illness including Influenza, COVID-19, RSV

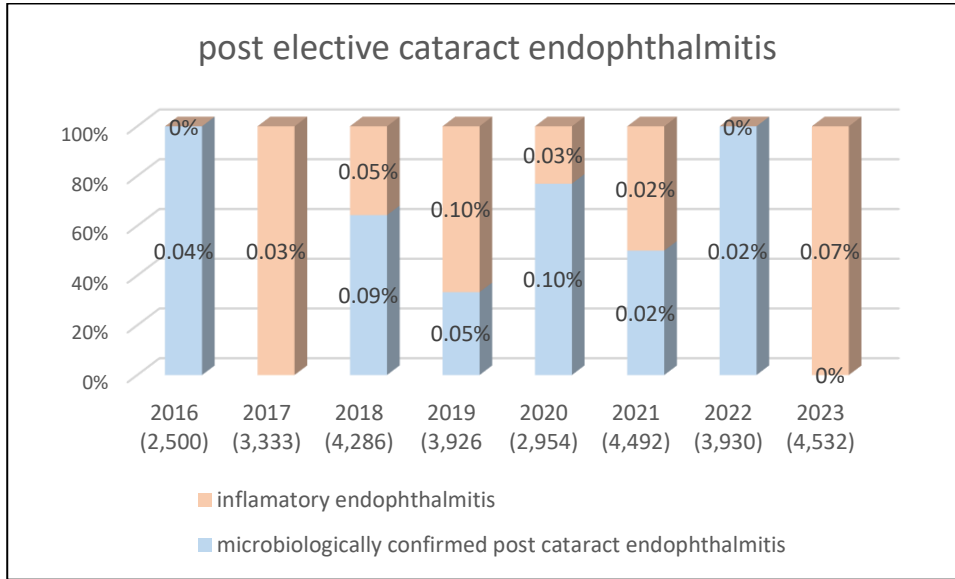
**Table 3: RVEEH KPI's 2023**

HCAI Key Performance Indicators	RVEEH KPI	2019	2020	2021	2022	2023
Rate of post-operative endophthalmitis (microbiologically confirmed) <b>Elective cataract surgery</b>	≤0.1%	0.05%	0.10%	0.02%	0.02%	0%
Rate of post-operative inflammatory endophthalmitis <b>Elective cataract surgery</b>		0.10%	0.03%	0.02%	0%	0.066%
Rate of endophthalmitis <b>Intravitreal injection</b>	≤0.05%	0.01%	0.02%	0.03%	0.017%	*0.01%
RVEEH acquired MRSA colonization	≤2	0	0	0	0	0
RVEEH acquired MRSA infection	≤2	0	0	0	0	0
Device related infections (PVCs)	≤5	0	0	2	0	0
PVC related blood stream infection	≤1	0	0	0	0	0
Urinary catheter BSI	≤1	0	0	0	0	0
HAI pneumonia - tracheostomy patients	≤2	1	1	0	0	0

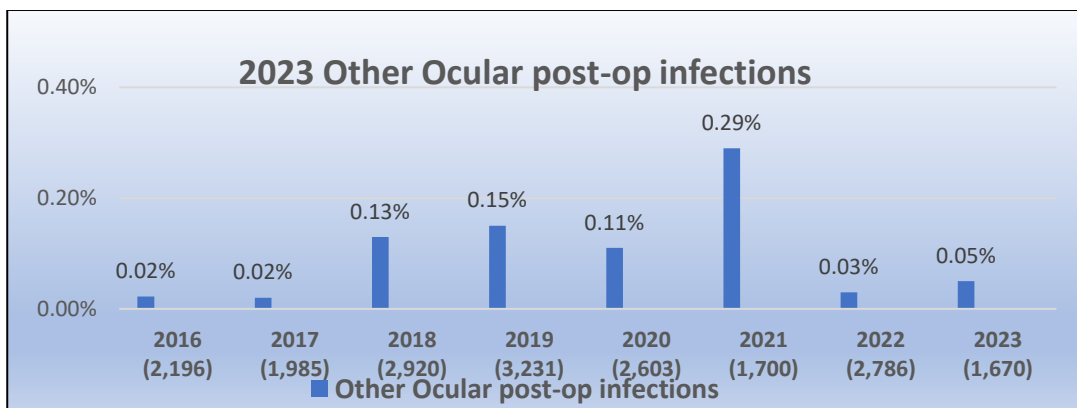
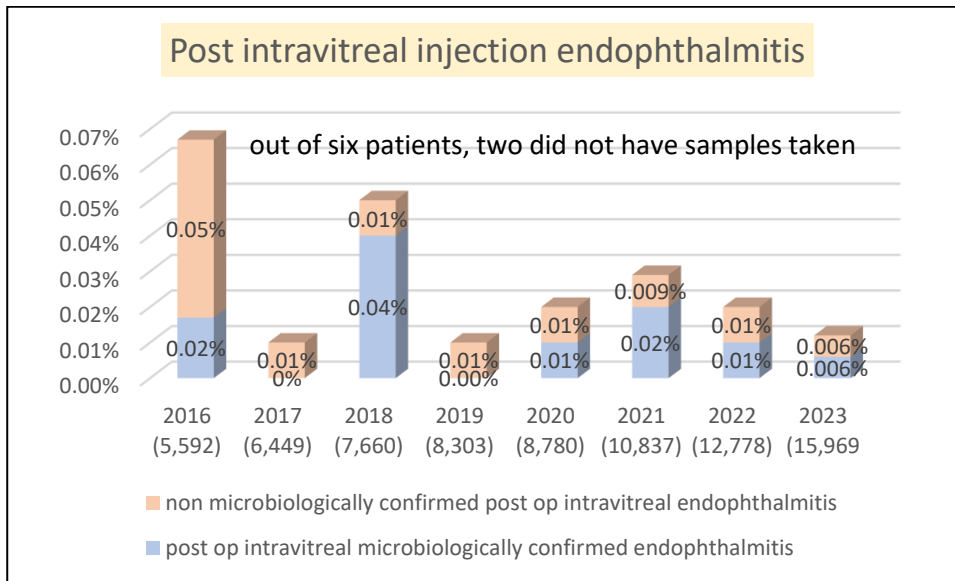
\*0.01%, this number includes microbiological and non-microbiological clinically confirmed endophthalmitis post intravitreal injection. (one of two intravitreal endophthalmitis was microbiologically confirmed (*Staph epidermidis*))

BSI=blood stream infection; PVC=peripheral venous catheter

## RVEEH Post-Operative Eye Infections in 2023



## Post intravitreal injection endophthalmitis.





**Standard 10: Healthcare Associated Infection and communicable/transmissible disease outbreaks are managed and controlled in a timely efficient and effective manner to reduce and control the spread of Healthcare Associated Infections.**

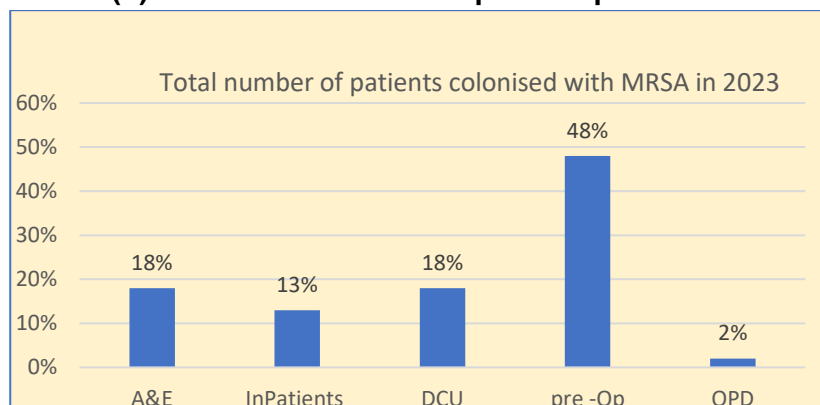
## 2.1 Multi-Drug Resistant Organism

3.2.1 MRSA screening is requested prior to admission on all patients in an at-risk category.

**Table 4(a) MRSA Screening**

MRSA Screening	2019	2020	2021	2022	2023
No. of MRSA screening swabs	6,953	4,344	4,900	5,130	5,628
No. of patients tested	1,462	918	1,019	1,062	1,444
Number of MRSA positive patients (%)	63 (4.3%)	35 (3.8%)	35 (3.2%)	36 (3.3%)	61 (4.2%)
Previously known carriers (%)	39%	25%	46%	50%	56%
Unknown MRSA carriers	61%	75%	54%	50%	44%
No. of MRSA HCAI	0	0	0	0	0
MRSA decolonisation	38%	50%	54%	50%	49%

**Table 4(b) Location where MRSA positive patients are detected.**



Most MRSA screening is conducted in the pre-operative assessment unit, indicating a proactive approach to identifying carriers of MRSA before surgical procedures.

**Reporting of Positive Results:**

Positive MRSA screening results are directly reported to the Infection Prevention Control Team (IPCT) from the Microbiology Laboratory in NMH. This ensures timely notification and allows for prompt action.

**Decolonization and Follow-Up Screening:**

The IPCT organizes decolonization and follow-up screening for all patients with positive MRSA results when necessary. This comprehensive approach helps prevent the spread of MRSA and reduces the risk of infection in both patients and healthcare workers.

**Intracameral Vancomycin Administration for Cataract Surgery:**

Patients with a known history of MRSA receive Intracameral Vancomycin 1mg as antibiotic prophylaxis during cataract surgery. This targeted approach helps mitigate the risk of MRSA-related infections in this specific patient population.

By implementing these measures, RVEEH demonstrates a commitment to infection prevention and control, ensuring the safety and well-being of patients undergoing surgical procedures, particularly those at higher risk of MRSA colonization or infection.

**Table 6: Carbapenemase-Producing Enterobacteriales (CPE)**

	2019	2020	2021	2022	2023
<b>Number of CPE screens</b>	580	459	433	352	383
<b>Number of New CPE</b>	1	0	0	0	0
<b>Known CPE patients attending the RVEEH overnight</b>	2	0	0	1	1
<b>Number of CPE infections</b>	0	0	0	0	0
<b>NOT isolated in en-suite room</b>	2	0	0	0	0
<b>Meropenem Use (g)</b>	1G	0	92G	0	46G

RVEEH conducts CPE screening on all applicable in-patients, adhering to national CPE screening criteria guidelines. This systematic approach helps identify potential carriers of CPE and prevent its spread within the hospital.

**Isolation Precautions for Patients with Known CPE History:**

Patients with a known history of CPE are admitted to single ensuite rooms, and all appropriate isolation precautions are followed. This includes measures such as strict adherence to hand hygiene, wearing personal protective equipment, and implementing environmental cleaning protocols to minimize the risk of transmission to other patients and healthcare workers.

RVEEH submits CPE data to the Health Service Executive (HSE) monthly. This ensures transparency and allows for ongoing monitoring of CPE prevalence and trends at both the hospital and national levels.

By implementing these measures, RVEEH demonstrates a proactive approach to CPE surveillance and management, prioritizing patient safety and infection control.

## Standard 12: There are systems in place to reduce and control antimicrobial resistance

### 2.2 Antimicrobial Consumption and Stewardship 2023

Pharmacy at the hospital compiles and submits Hospital Antibiotic Consumption Data to the Health Protection Surveillance Centre (HPSC). Only data for the first half of 2023 is currently accessible.

The RVEEH is among sixty-five hospitals in Ireland that participated in an ECDC Point Prevalence Survey (PPS) on antimicrobial use and healthcare-associated infections. This was conducted in May 2023. The survey categorizes hospitals by type, with the RVEEH falling under the Public Specialist category. The expectation is that each hospital will receive an individual report based on the survey findings. *See Appendix 7 for preliminary results.*

A Fluoroquinolone (FQ) audit was carried out in 2023. The reason for this audit was the RVEEH has consistently been the highest user of fluoroquinolone antibiotics via the systemic route, per 100 bed days used, of all hospitals in Ireland for the past 6 years.

The audit findings were reassuring and found that systemic FQ use was appropriate in >95% of in-patients. However, in most cases of endophthalmitis, an incorrect FQ was chosen. Oral moxifloxacin or levofloxacin should be used because they have improved cover against Streptococci and gram-positive organisms in general, compared to ciprofloxacin. Furthermore, in 3 of 4 IV prescriptions, the IV route was not required and it should have been oral route. The IV route should only be used if the patient is 'nil by mouth' as all fluoroquinolones have excellent bioavailability. This audit report and quality improvement plan was submitted to Drugs, Therapeutics & Antimicrobial Stewardship Committee, Infection Prevention & Control Committee, Eye Group and ENT Group.

*See appendix 8 for Fluoroquinolone audit results.*

### 2.3 Sepsis, Blood Stream Infection and European Antimicrobial Resistance Surveillance Network (EARS-Net)

- Sepsis is a life-threatening reaction to an infection, and without timely treatment, sepsis can rapidly lead to tissue damage, organ failure, and death.
- The Surveillance Scientist contributes RVEEH blood stream infection data to the European Antimicrobial Resistance Surveillance Network (EARS-Net)
- Thirteen patients had blood cultures in 2023, of which Sepsis 6 was indicated in 7 patients. Three patients developed sepsis.
- Online sepsis training is mandatory for all clinical staff members.
- The World Sepsis Awareness Day took place in September 2023. The IPCT participated in this campaign.
- The IPCN and the Consultant Microbiologist are members of the Deteriorating Patient Committee. Sepsis as a standing agenda item. The IPCN carried out a detailed audit on all patients who had a blood culture taken in 2023 for compliance to sepsis 6 protocol.
- An audit conducted by the national sepsis lead ADoN took place in May 2023. No sepsis cases were identified during the audit.

**Table 7: Common Transmissible Organisms in RVEEH**

	2019	2020	2021	2022	2023
Acanthamoeba (ocular)	5	5	6	29	18
Adenovirus (ocular)	109	27	7	95	78
Blood stream infections BSI	1	0	0	1	2
Sepsis	3	0	0	1	3
Chlamydia (ocular)	20	16	12	11	23
Clostridium difficile	2	0	0	0	1
Gonorrhoea (ocular)	4	1	1	7	4
Group A Streptococcus	15	9	1	2	17
HIV (acute new diagnosis)	0	1	0	0	1
MRSA - healthcare acquired colonisation	0	0	0	0	0
MRSA - HCAI acquired infection	0	0	0	0	0
Norovirus	0	0	0	0	0
Syphilis	5	3	5	5	*6
Toxoplasmosis (acute)	0	1	0	1	2
TB Pulmonary	0	0	0	0	0
TB Extra-pulmonary (neck node & ocular)	4	3	3	1	3

\*Four early infectious syphilis and 2 latent infections

### 3.6 Surgical Site Infection

#### 3.6.1 Post-Operative Cataract Endophthalmitis

Post-cataract endophthalmitis is defined as inflammation or infection of the intraocular space diagnosed within three months of cataract surgery.

The RVEEH performed 4,532 cataract operations in 2023. There were three cases of clinical endophthalmitis post-cataract surgery in 2023, resulting in an incidence rate of 0.066%.

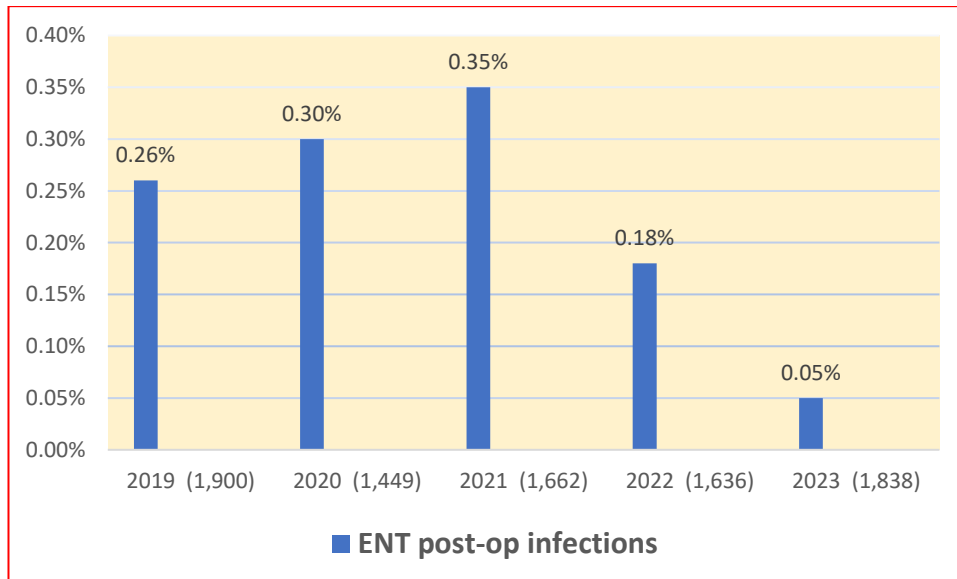
None of these cases were microbiologically confirmed.

Both patients with post-cataract endophthalmitis were admitted and received appropriate intravitreal and systemic antimicrobial treatment.

Preoperative antisepsis was conducted according to guidelines, including the application of 5% povidone-iodine minims into the conjunctival fornix for three minutes and cleaning of the surrounding eyelid with a 5% povidone-iodine solution.

Surgical prophylaxis involved the use of intracameral cefuroxime.

**Table 9: Post- Op ENT Infections**



### **Covid-19**

#### **3.6.1 Staff Absences:**

One hundred and four staff members were absent from work due to COVID-19 during in 2023.

#### **Patient Cases:**

Only one patient tested positive for COVID-19 prior to surgery.

COVID-19 leave remains at five days of isolation.

Continued vigilance and adherence to infection control measures remain essential in managing COVID-19 within the hospital and ensuring the well-being of everyone involved.

#### **3.6.2 Staff Vaccination Program 2023**

**Pre-Employment Vaccines:** All RVEEH staff must ensure they are up to date with all required pre-employment vaccinations. These vaccines are essential in preventing the spread of communicable diseases and protecting vulnerable patients.

Med Mark and the RVEEH Occupational Health liaison nurse have documentation concerning all pre-employment vaccination statuses.

**Influenza Vaccine:** The influenza vaccine is crucial in reducing the impact of flu season in our hospital. Getting vaccinated against the flu not only protects staff members but also helps prevent the spread of influenza to patients and colleagues. Sixty one percent of staff members received the influenza vaccine in the hospital. The IPCT and liaison Occupational health nurse ran the influenza and covid vaccine program.

**COVID-19 Booster Vaccine:** As COVID-19 continues to present challenges, staying up to date with booster vaccines is vital. Booster doses enhance immunity and provide additional protection against severe illness and transmission of the virus. Thirty two percent of staff members received their COVID -19 booster in the hospital.

## 4.0 Audit and Monitoring

**Standard 3: The physical environment, facilities and resources are developed and managed to minimise the risk of service users, staff and visitors acquiring a Healthcare Associated Infection:**

**Standard 6: Hand hygiene practices that prevent, control, and reduce the risk of the spread of healthcare associated infections are in place.**

### 4.1 Hand Hygiene Audits

Hand Hygiene education is provided to all clinical staff annually.

94% percent of clinical staff received hand hygiene education and training during the two-year period.

Audits of Hand Hygiene practice is carried out regularly throughout the hospital, more frequently in high-risk areas.

Results are fed back directly to clinical area manager and then further discussed at quarterly IPCC meeting.

In May and November hospital wide audits are carried out in seven areas. Two hundred and ten hand hygiene moments are observed.

These are submitted to the HPSC, and results are published nationally. In 2023 results were May/June 89. % compliance rate overall and Oct/Nov 91% compliance overall.

#### Hand hygiene compliance for 2023

Period	RVEEH Hospital Compliance	LCI	UCI	HSE Average	HSE Target	Time of Year
16	91.9	87.4	95.2	92%	≥90%	May/June 2019
17	91.0	86.2	94.5	92%	≥90%	Oct/Dec 2019
18	92.4	87.9	95.6	92%	≥90%	Oct/Dec 2020
20	93.1	88%	96%	93%	≥90%	May/July 2021
21	90.1	86%	94.5%	93%	≥90%	Nov 2021
22	90%	85.5%	94%	93%	≥90%	May 2022
23	89.5%	85%	93%	92%	≥90%	Nov 2022
24	89%				≥90%	May 2023
25	91%				≥90%	Nov 2024

### 4.2 Dangerous Goods Safety Advisor Audits (DGSA)

In 2023, two Dangerous Goods Safety Audits were conducted to evaluate the hospital's compliance with Dangerous Goods and Chemical Safety Legislation concerning the transport, storage, handling, and segregation of hazardous materials, including chemicals and medical gases.

The first audit, conducted on July 7th, identified observations, including issues such as the use of outdated labels for certain bins and incomplete training for the Facilities Manager. Corrective actions were promptly taken to address these observations.

The second audit, conducted on October 5th, identified one non-compliance regarding the absence of absorbent material in a clinical waste bin in the Recovery Area. Additionally, seven observations were noted, including improperly assembled sharps bins, open clinical waste bins, unlabelled Formalin cabinets, and faulty air conditioning units. Four of these observations were addressed with corrective actions following the audit.

Overall, the hospital has taken proactive measures to address the identified issues and improve compliance with safety regulations regarding dangerous goods and chemicals.

The Infection Prevention Control Team (IPCT) plays a role in promoting sustainability efforts within the hospital by being members of the sustainability committee. This committee focuses on addressing waste segregation and management, among other sustainability initiatives. *See Appendix 6 for DGSA audit report.*

## 5.0 Facilities

**Standard 3: The physical environment, facilities and resources are developed and managed to minimise the risk of service users, staff and visitors acquiring a Healthcare Associated Infection:**

### 5.1 Environmental Monitoring

#### Infection Control Environmental Audits

The IPCT audits all clinical areas of the hospital regularly to identify problems that may increase the risk of infection or harm to patients and staff. These audits are based on elements of Standard Precautions for the prevention of Healthcare Associated Infections (HCAIs).

An electronic app developed by Medical E Guides (MEG) is used for auditing, allowing for efficient data collection and immediate availability of results to all managers online.

Correction of Issues: Relevant issues that can be corrected at the time of the audit are addressed immediately.

Structural issues and those requiring a substantial financial cost are reported to facilities and the Chief Operating Officer (COO) for further action.

Sink Upgrade Project and Environmental Audit Graphs:

Appendices 6&7 provide information regarding the sink upgrade project and environmental audit graphs, respectively. These documents contain data and analysis related to the hospital's efforts in improving infection control infrastructure and environmental hygiene.

Overview and Departmental Compliance Tables: The tables provided show an overview of audit findings and departmental compliance rates with infection control measures. This data is crucial for identifying areas for improvement and monitoring progress over time. By implementing such effective audit procedures and utilizing technology for data collection and analysis, RVEEH demonstrates a commitment to maintaining high standards of infection prevention and control.

## Heatmap

	RV - Royal Victoria Eye and Ear Hospital, Dublin ^														
	A&E	Basement	Cataract Unit	CDU	Day Care Unit	EDU	ENT OPD	ENT OT	EYE OPD	EYE OT	Harvey Lewis Wing (HLW)	HLW West Wing	Macular Unit	West Wing	X-ray
Section A: General Environment	82% (8)	62% (4)	89% (2)	-	65% (6)	50% (1)	82% (5)	65% (5)	52% (4)	55% (2)	84% (2)	79% (3)	94% (2)	75% (2)	69% (4)
Section B: Patient Areas	93% (7)	95% (3)	67% (2)	-	87% (6)	-	86% (6)	85% (5)	90% (4)	75% (2)	94% (2)	77% (3)	96% (3)	100% (2)	100% (4)
Section C: Patient Equipment	97% (7)	95% (4)	89% (2)	-	91% (6)	-	96% (6)	93% (5)	94% (4)	96% (2)	88% (2)	86% (3)	97% (3)	84% (2)	96% (4)
Section D: Patient Toilets/Washrooms	71% (6)	76% (4)	94% (2)	-	79% (6)	-	75% (5)	52% (4)	81% (2)	44% (2)	70% (2)	62% (2)	100% (1)	84% (2)	71% (3)
Section E: Clean Utility	89% (6)	-	100% (2)	-	85% (6)	-	89% (5)	68% (3)	80% (4)	66% (2)	86% (2)	85% (3)	86% (2)	77% (2)	82% (2)
Section F: Dirty Utility	85% (7)	-	76% (2)	-	79% (6)	-	92% (5)	-	45% (1)	-	100% (2)	87% (3)	-	82% (2)	-
Section G: Waste Disposal	96% (7)	92% (4)	100% (2)	-	93% (6)	86% (1)	98% (5)	92% (5)	92% (4)	70% (2)	94% (2)	97% (3)	87% (3)	90% (2)	100% (4)
Section H: Sharps Management	71% (8)	53% (2)	58% (2)	-	88% (6)	-	93% (5)	83% (5)	78% (4)	83% (2)	67% (2)	83% (3)	72% (3)	92% (2)	100% (3)
Section I: Isolation Rooms	100% (2)	-	-	-	-	-	100% (1)	-	-	-	100% (2)	100% (1)	-	-	-
Section J: Cleaning/Housekeeping	100% (2)	100% (2)	100% (1)	-	100% (1)	-	100% (2)	-	100% (1)	-	96% (3)	94% (2)	100% (1)	-	100% (2)
Section K: Discussion with staff	100% (1)	-	-	-	95% (2)	-	-	-	100% (1)	-	100% (1)	100% (1)	-	-	-
Section L: Hand Hygiene Practices	84% (5)	-	-	-	79% (3)	100% (1)	79% (3)	75% (4)	67% (1)	68% (2)	86% (2)	73% (1)	86% (2)	82% (2)	82% (3)
Section M: Linen	-	-	89% (1)	-	71% (2)	-	-	89% (2)	-	78% (2)	-	89% (2)	-	100% (2)	-
Section N: PVC	-	-	-	-	-	-	-	-	100% (1)	-	-	-	100% (1)	-	-
Section P: Discussion with Area Manager	100% (1)	100% (1)	100% (1)	-	94% (1)	-	100% (1)	-	100% (1)	-	-	100% (1)	100% (1)	-	-



## 5.2 Legionella Prevention

Industrial Water Management (IWM) is responsible for managing and maintaining the water system in the hospital. There are a comprehensive set of controls in place to minimize the risk of legionella in the hospital's water system. Each measure targets different aspects of water management and treatment to ensure the safety and quality of the water supply. Summary of the controls:

- Quarterly quality testing: Regular testing for indicator organisms like legionella and total viable counts helps to monitor the water system.
- Additional retesting: This ensures that if any issues are detected or suspected, further testing is conducted promptly to assess the situation.
- Weekly flushing of infrequently used water outlets: Flushing helps prevent stagnant water, which provides ideal conditions for bacteria like legionella.
- Monthly water temperature monitoring: Legionella bacteria thrive in warm water, so monitoring temperature helps to ensure it remains below the optimal range for their growth.
- Quarterly shower head cleaning: Shower heads can harbour bacteria and biofilm, so regular cleaning helps to prevent their proliferation.
- Annual cleaning of water storage tanks: This prevents the buildup of sediment and biofilm, which can provide a habitat for legionella.
- Annual TMV servicing: Thermostatic mixing valves help control water temperature, which can affect legionella growth, so ensuring they are properly maintained is crucial.
- Electronically controlled disinfectant dosing: This helps maintain disinfectant levels in the water storage tanks, which can control bacterial growth.
- Copper silver ionization treatment: Copper silver ionization is an effective method for controlling legionella and other bacteria in water systems.

By implementing these controls, the hospital has taken proactive steps to protect the health and safety of patients, staff, and visitors by minimizing the risk of legionella contamination in the hospital's water system.

While the majority of samples taken showed a negative result for legionella, it is important to note that low counts of legionella were detected in the eye OPD treatment rooms. A possible contributing factor is the long length of water piping leading to the wash hand sinks in these two rooms, which may result in stagnation.

Regular flushing of the water lines in the eye OPD is ongoing, along with all the controls outlined above.

### 5.3 Facilities projects and upgrades

While the infrastructural challenges of an older building are accepted, the RVEEH, as an acute hospital, providing surgical and other services, strives to continually improve the patient environment to minimise risk and improve the overall patient experience.

#### Summary of recent refurbishment and improvement projects within the hospital in 2023:

- The hospital has a new audiology department, which has been refurbished and it is now located in the basement, directly below the Ear, Nose, and Throat (ENT) Outpatient Department (OPD). This enhances accessibility and convenience for patients requiring audiology services, as they can easily access both departments within proximity. Additionally, the refurbished space ensures a modern and functional environment for audiology assessments and treatments, contributing to improved patient care and experience.
- Flooring Replacement: Completed in various areas including the ENT theatre, Eye Outpatient Department (OPD), and ENT OPD, improving safety and hygiene.
- Treatment Room Refurbishment: The in-patient ward's treatment room has been renovated, creating separate areas for treatment and clean utility, including an IV drug preparation room, to enhance patient care and infection control.
- Staff Office Refurbishment: A newly refurbished staff office has been established in the in-patient department to provide a conducive workspace for hospital personnel.
- Painting Project: Ongoing painting work has been carried out in both clinical and non-clinical areas, enhancing the overall appearance and cleanliness of the hospital environment.
- These initiatives reflect the hospital's commitment to maintaining and improving its facilities to ensure the comfort, safety, and efficiency of patient care and staff operations.

### 5.4 Operating Theatre

The lack of conventional ventilation in the first-floor operating theatres continues to be recorded on the corporate risk register. However, this issue has been escalated to higher levels of authority, including the medical board, Hospital Management Group (HMG), and the hospital's council.

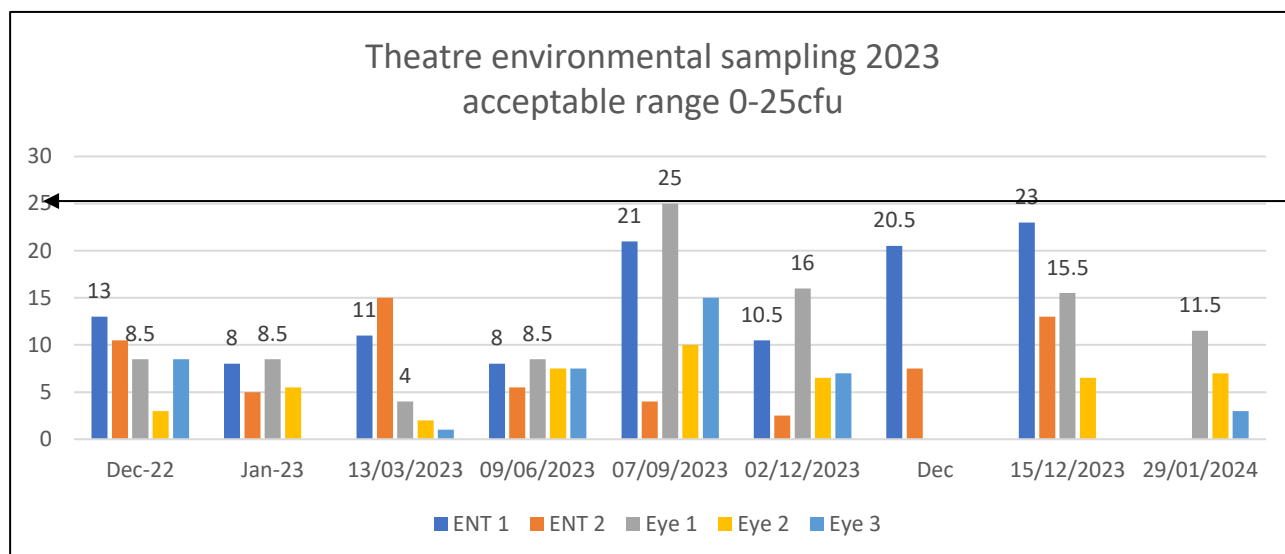
The approval of a proposal by the hospital's Council in 2023, for the site development of upgrading current first floor theatres and five new theatres with a Post-Anaesthesia Care Unit (PACU) and additional in-patient rooms is a significant step forward. Requesting and obtaining funding from the Health Service Executive (HSE) in 2024 is expected to address this issue in the long term.

In the short term, risk mitigation measures such as environmental air sampling and regular environmental audits continue. The presence of High-Efficiency Particulate Air (HEPA) filtration units on the corridors outside the ENT and Eye theatres is a practical step to improve the quality of circulating air and reduce potential risks to patients and staff. Facilities department continues to work with engineers regarding a temporary air change interim solution.

Continued monitoring within the hospital environment continues while plans for site development progress.

In 2023, plans commenced to repurpose an area in the Cataract Unit (ground floor) into a fully functional second operating theatre, which was previously utilized as an admission suite

for the current cataract theatre. This project will involve upgrading the existing retinal room situated adjacent to the Cataract theatre, creating a link corridor between the two rooms and modifying the theatre to comply with appropriate standards.



## 6.0 Decontamination

### Central Decontamination Unit 2023

The decontamination facility is engineered and managed to ensure proper separation between clean and dirty activities, preventing contamination of disinfected and sterilised medical devices. The RVEEH CDU supports six operating theatres.

In August 2023, an external audit was carried out by Ireland East Hospital Group (IEHG) to complete a comprehensive survey and review of decontamination services within all IEHG Hospitals, with the aim of bringing standards of decontamination across the group up to ISO13485 best practice standards for decontamination.

The independent review at the RVEEH produced recommendations to reduce risks identified and provide an improvement plan aimed at raising the compliance level to a minimum of complete separation of clean and dirty services with the view to eventual compliance with ISO13485 standards.

### Scope of Audit

- Review policy documents, training records and SOPs in the hospital to assess document compliance with HSE National Decontamination standards and relevant sections of ISO 13485:2016
- Audit of decontamination services in the hospital to assess compliance with HSE National Decontamination standards, HBN13 and relevant sections of ISO 13485:2016 standards.
- Audit of compliance with local documentation

### Summary of Audit Results

AUDIT SYSTEM	TOTAL STANDARDS AUDITED	TOTAL STANDARDS APPLICABLE	TOTAL STANDARDS COMPLIANT	PERCENTAGE STANDARDS COMPLIANT
Facility Decontamination Quality Assurance	322	322	320	99.4%
Central Decontamination Unit	376	376	374	98.4%
Local Departmental Decontamination	Na	Na	Na	Na
<b>Total Compliance score</b>	<b>698</b>	<b>698</b>	<b>694</b>	<b>99.4%</b>

#### FINDINGS:

The Central Decontamination unit at Royal Victoria Eye and Ear Hospital is well run and has an active, well managed quality management and monitoring system in place. While the hospital CDU does not have ISO 13485 standards yet, the unit is well on the way to achieving this and it is this auditor's opinion that the current layout and design would not impact on their ability to achieve ISO13485 accreditation. Some minor non-conformances which can be addressed by the hospital would help achieve this accreditation.

#### Endoscopy Decontamination Unit 2023

Flexible Endoscopes are complex Reusable Invasive Medical Devices (RIMDs) that require unique consideration with respect to decontamination. Effective decontamination of Endoscopes, performed in appropriate purpose-built facilities are an essential component in the prevention and control of healthcare associated infection.

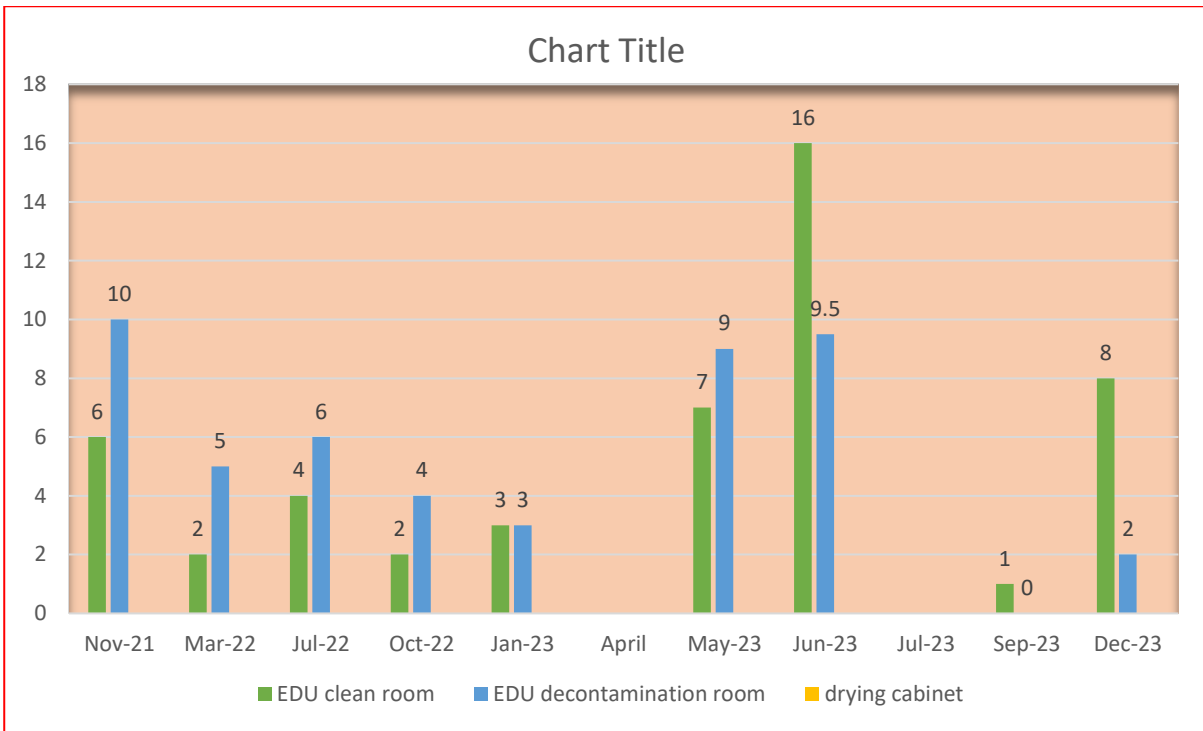
In accordance with HSE Standards and Recommended Practices for Commissioning, Validation and Testing in Endoscope Decontamination Units all EDU equipment at the RVEEH is validated, maintained, monitored, and periodically tested. The EDU decontamination equipment is procured in compliance with harmonised standards via the National Equipment Replacement Programme (NERP). Currently 2 drying cabinets greater than 10 years old are due for replacement in February 2024 under the NERP replacement programme.

#### Facilities

The EDU department comprises two distinct areas: a decontamination room and a clean room. Equipment flow within the department is carefully structured to prevent cross-contamination risks. Temperature control in the EDU is via a wall-mounted air conditioning unit in the decontamination room, maintained and monitored to prevent the spread of healthcare-associated infection. Temperature control is set between 18-22 degrees Celsius, and relative humidity is monitored daily within the range of 35-60% by Celsius monitoring.

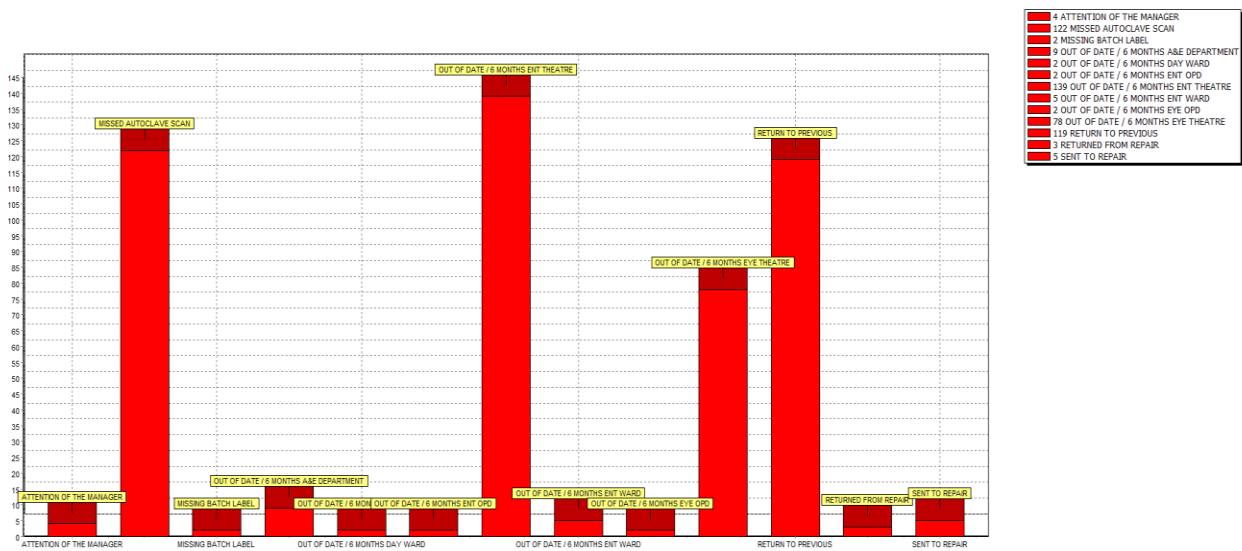
#### Environmental Monitoring

Quarterly testing is carried out in the endoscopy unit by the IPC team using blood agar settle plates. See table below.

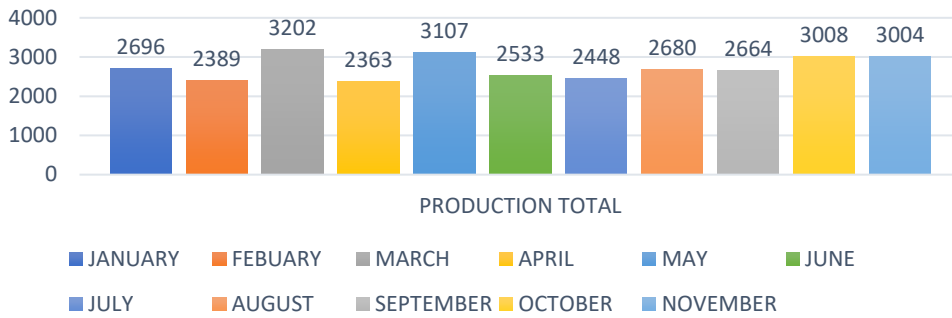


## Key performance Indicators CDU/EDU 2023 Non-conformances 2023

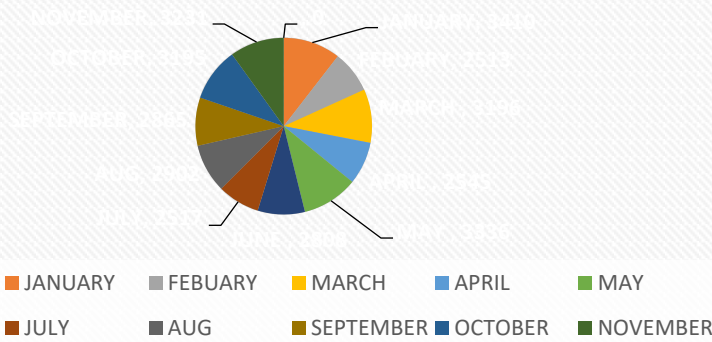
Non Conformance Chart For 2023



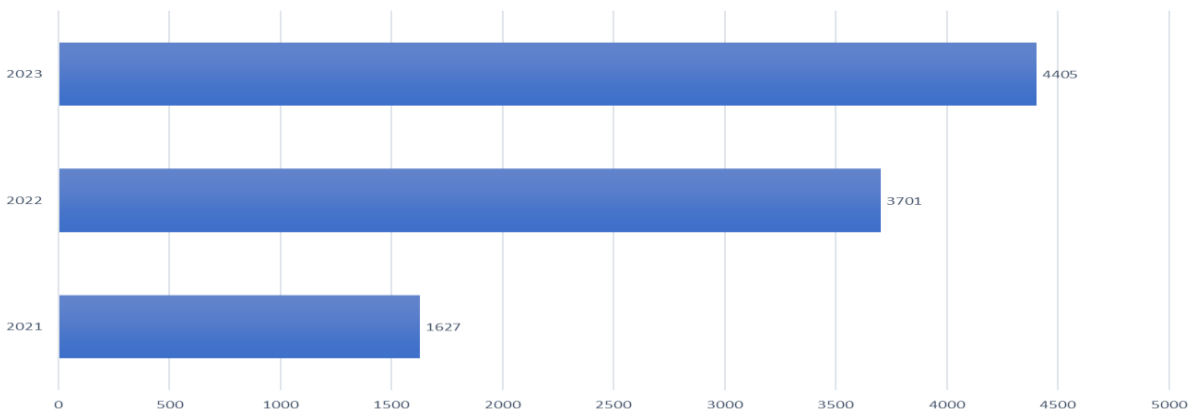
### AUTOCLAVE PRODUCTION TOTAL JANUARY - NOVEMBER 2023



### WASHER PRODUCTION TOTAL JAN-NOV 2023



### AER Production Total Year from January to July 2021-2022-2023



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## 7.0 Education and Training

In 2023, the hospital implemented comprehensive infection control education and awareness initiatives:

**Induction Training:** All new clinical staff received infection control education, including hand hygiene and PPE training, during their induction.

**Ongoing Education:** Clinical staff receive waste management and hand hygiene education every two years, with many completing HSE online infection control modules.

**Awareness Events:** The IPCT organized a hand hygiene awareness day coinciding with the WHO hand hygiene campaign, promoting compliance through a quiz.

In addition, a sepsis awareness day was held, offering on-the-spot education and distributing informational materials. This initiative aimed to raise awareness among staff about sepsis, a potentially life-threatening condition, providing essential knowledge about its signs, symptoms, and management. By offering education and distributing materials, the hospital aimed to improve early recognition and prompt treatment of sepsis cases, ultimately enhancing patient outcomes and safety.

An antimicrobial stewardship campaign and awareness day was held, aligning with European Antibiotic Awareness Day, raising awareness of antibiotic resistance and superbugs.

The Infection Prevention Control Team (IPCT) actively engaged in in-service study days, focusing on topics such as Carbapenemase-Producing Enterobacteriaceae (CPE) Methicillin-Resistant Staphylococcus Aureus (MRSA), Standard precautions, etc. These study days provided an opportunity for healthcare professionals to increase their understanding of these infection-related issues. By participating in these sessions, the IPCT's objective is to ensure staff remain informed about emerging infection control threats and best practices, contributing to the hospital's efforts to maintain a safe and infection-free environment for patients and staff.

**Communication:** The IPCT disseminates a quarterly Infection Control newsletter to clinical staff and relevant departments, sharing infection control surveillance rates, post-operative infection statistics, antimicrobial audit results, and relevant KPIs.

The Infection Prevention Control Team (IPCT) compiles an annual Infection Control Annual Report, which is accessible on both the hospital website and Q-pulse platform. This outlines a comprehensive overview of the hospital's infection control practices, including surveillance data, audit results, and key performance indicators. This report is available online for all staff to access.

## Appendix 1

### Infection Prevention & Control (IPC) Plan for 2024 Royal Victoria Eye & Ear Hospital

Target	Action	Action by	Date Complete
<p>To provide infection prevention and control education for staff and students in the Hospital</p> <p>Education forms a very important part of the Infection Control Program.</p>	<p><b>The Infection Control Nurse provides training and education to all staff, patients, and relatives. Training is preceded by a needs assessment. The training program includes the following:</b></p> <p><b>1. Provide Hand Hygiene</b> education including demonstrations and lectures for all clinical staff annually.</p> <p>Hand Hygiene education is appropriate for the grade of staff. Second week in <u>January</u> and <u>July</u> for NHCD at their induction. All other new clinical staff receive hand hygiene and infection control education at induction. All clinical staff receive an educational update in hand hygiene and waste management. The HPSC hand hygiene video is sent to all Consultants and NHCDs for viewing. Evidence of viewing is documented.</p> <p>Hand Hygiene awareness days are held during the year as part of the Hand Hygiene Education Program. This includes demonstration and analysis of techniques using an ultraviolet light box. Education is evaluated through questionnaire and observational audit.</p> <p>Prompts are provided in the form of posters and leaflets in all departments.</p>	SF/MMcC/CF	
	<p>2. Provide PPE training, including donning and doffing techniques which is appropriate for all staff disciplines in the hospital. Provide external mask fitting demonstration for relevant staff.</p>	SF/MMcC/CF	
	<p><b>3. Provide general infection control education</b> including lectures on waste disposal, isolation procedures and standard precautions and correct use of personal protective equipment. Scheduled hours for IPC education lectures are allocated during the hospital's annual In-service study days. The IPCT part takes part in the IV management study day.</p>	SF/MMcC/CF	
	<p><b>4. Ensure all staff are aware of the procedure for accessing Infection Control Policies information and on hospital intranet.</b></p> <p><b>5. Provide advice and updates on matters relating to IPC to all relevant clinical staff. Give advice and support regarding IPC policy and related issues.</b></p> <p><b>5 Quarterly "Infection Surveillance newsletter"</b> to be distributed to all relevant staff members.</p>	SF/MMcC/CF /SK	



	Additional infection control bulletins to be disseminated when appropriate.		
Co-ordinate activities in relation to emerging infectious diseases	<ul style="list-style-type: none"> <li>Planned patient Risk Assessment, patient placement including PPE advice. Liaise with stores department to ensure adequate supplies</li> <li>Education regarding symptoms of emerging infectious diseases</li> <li>Ensure latest advice from HSE is communicated to staff in timely manner</li> <li>Provide up to date surveillance statistics to Nursing Admin and HMG</li> <li>Liaise with Micro lab re. patient and staff samples when and if taken</li> <li>Provide advice and support to staff with symptoms, advise re isolation and return to work</li> <li>Arrange and attend meetings during times of increased infection in community and communicate results to</li> </ul>	SF/CF/MMcC /SK	
Develop and review infection control policies, procedures and guidelines in accordance with legislation and evidence-based practice. Policies for updating in 2022- see Q Pulse list	See Q-Pulse for “Active” dates and “Revision” dates	SF/MMcC/CF /SK	See Q-Pulse
Infection Control Audits of practice and facilities	<ul style="list-style-type: none"> <li>Monthly IV care bundle audit.</li> <li>HST audits of facilities and practices. (See audit schedule for 2022) Compile summary of outstanding issues. Report to IRQS on outstanding issues. Distribute results and feedback of the audits to all relevant CNMs and Heads of Departments</li> <li>Observational hand hygiene audits and send results to HSE, re-audit where necessary. Disseminate hand hygiene audits to relevant clinical staff and heads of Departments.</li> <li>Audit of PPE compliance (including donning and doffing)</li> <li>Sepsis audit</li> <li>Antimicrobial audit(s)</li> </ul>	SF/MMcC/CF  SF/MMcC  SK/MMcC/C F/SK	
Monitor and report rates of infection, healthcare associated infections, notifiable diseases, antimicrobial resistance, antimicrobial consumption and alcohol gel usage.	<ol style="list-style-type: none"> <li>Daily ward based and laboratory surveillance.</li> <li>Collect, analyze and report post-operative endophthalmitis infection rates (post-cataract and post-intravitreal injection).</li> <li>Collect, analyze and report data on infections and antibiotic resistant organisms.</li> </ol>	SF/MMcC/CF  SF/MMcC/CF  SF/MMcC/CF  SK/COC	

	<p>4. Collect and report data on statutory notifiable infectious diseases.</p> <p>5. Collect and report data to the European Antimicrobial Resistance Surveillance Network (EARS-Net)</p> <p>6. Collect and report data on alcohol gel use (internal).</p> <p>7. Collect and report data on antibiotic consumption (HPSC and HSE)</p> <p>8. Distribute quarterly surveillance reports to Infection Control Committee</p> <p>9. Distribute quarterly or as required surveillance reports to all relevant clinical staff.</p>	<p>SK/COC</p> <p>JAOC</p> <p>JAOC</p> <p>SF/MMcC/CF</p> <p>SF/MMcC/CF</p>	
Investigate and lead on Outbreak management.	<p>Monitor, control and report outbreaks in a timely manner. Establish appropriate committees.</p> <p>Provide on-going education and information to staff and patients as required.</p>	SF/MMcC/CF /SK	
Identify infection risks and advise on appropriate action to prevent or minimize these risks.	<p>Liaise with patients, GPs and medical teams regarding patients colonized and infected with transmissible diseases or organisms.</p> <p>Analyze Infection Control related incidents and follow up to prevent these risks occurring in the future.</p>	SF/MMcC/CF	
Provide advice and support regarding infection prevention and control policy and related issues	Refer to Q-Pulse for list of policies to be updated this year	SF/MMcC/CF	
Attend regular meetings and educational seminars relevant to infection prevention and control.	<ul style="list-style-type: none"> <li>• Infection Control Committee</li> <li>• Infection Control Team meetings</li> <li>• CNMs Committee (incorporating hygiene services)</li> <li>• R&amp;Q Committee</li> <li>• Drugs, therapeutics and antimicrobial stewardship committee</li> <li>• Health &amp; Safety Committee</li> <li>• Facilities Committee</li> <li>• Deteriorating Patient Committee</li> <li>• IEHG HCAI meetings</li> <li>• IPS Conference</li> <li>• Antimicrobial PPS Study Day</li> </ul>	SF/MMcC/CF /SK	
Produce an annual work plan and annual report	IPC Work Plan 2024		

SF = Sinead Fitzgerald, Infection Control Nurse; MMcC = Margie McCarthy, Infection Control Nurse, CF = Carol Fagan, Acting Infection Control Nurse; SK = Susan Knowles, Consultant Microbiologist, COC = Carol O'Connor, Surveillance Scientist

Signed \_\_\_\_\_

Date \_\_\_\_\_



## Appendix 2

### Analysis of Infection Control Risk Register

#### Ventilation in OT

##### Risk

The ventilation system in the five first-floor operating theatres falls short of internationally recognized standards, posing an increased risk of post-operative infection. This concern has been raised with the HSE, Hospital Management Group (HMG), Medical Board, and Council previously. The IPCT recommends adherence to design standards outlined in HBN 26: Facilities for surgical procedures in acute hospitals and HTM 03-01: Specialized ventilation for healthcare premises. These standards include ensuring a minimum of 25 air changes per hour in the operating theatres and 35 air changes per hour in the instrument set-up area. Adequate pressure differentials between adjacent rooms are also necessary to prevent airborne contamination.

Air conditioning units are in-situ in all five first floor theatres for temperature control - these should not be used in OT.

To mitigate the risk, three HEPA filter units have been installed, with two each on the ENT OT and Eye OT corridors. Additionally, temporary ventilation systems with air changes were installed in the ENT OTs and Eye OTs during the COVID-19 pandemic. Regular environmental monitoring is conducted in these theatres to assess the situation. Despite these measures, the risk remains a concern and has been communicated to the hospital's HMG, Medical board, Council, and HSE estates.

The infrastructure of all first-floor theatres is poor with small sized rooms and lack of recommended facilities including dedicated prep room. Some operating theatres open directly onto a corridor at CDU and PACU. The IPCT produced a 'Report on Operating Theatres in RVEEH' dated 1/10/1021. This report was escalated up the HMG, Medical board and the Hospital Council.

In 2023, plans commenced to repurpose an area in the Cataract unit into a fully functional operating theatre, which was previously utilized as an admission suite. This project will involve upgrading the existing retinal room situated adjacent to the Cataract theatre, creating a link corridor between the two rooms and modifying the theatre to comply with international standards.

#### Isolation Room

Risk: Potential for infection transmission due to insufficient isolation facilities.

Controls in place: The hospital has just two ensuite rooms within the in-patient area, which are reserved primarily for patients with communicable diseases, particularly those involving enteric organisms. Additionally, one single room is equipped with negative pressure ventilation. In cases where additional ensuite rooms are needed but unavailable, the IPCT recommends allocating a bathroom for exclusive use by a single patient to enhance isolation measures.

#### Risk from Water System

Risk: The aging and intricate water system at RVEEH poses challenges to standard Legionella controls, attributed to several factors:

Structural deficiencies in the hospital's plumbing system.

Lengthy lead-in pipe works to certain outlets, some of which are without returns.

Non accessible uninsulated pipes where hot and cold lines run side by side.

Abundance of infrequently used outlets.

Controls: Refer to Section 5.1.1 for Legionella Controls.

### **Hand Hygiene Sinks**

**Risk** Many existing sinks do not conform to the recommended design standard for sinks in healthcare settings HBN 00-10 Part C. Funding has been requested from the HSE to upgrade the hand hygiene sinks in the hospital. The project to upgrade all hand hygiene sinks is ongoing. The IPCT recommends the use of alcohol hand sanitizer in areas where there are inadequate or insufficient hand washing sinks. 77% of RVEEH hand hygiene sinks are now compliant with HBN-00-10.

*Please see appendix 6 regarding sink upgrade programme.*

### Appendix 3: Membership of Infection Control Committee 2023

Infection Control Committee Meeting 2023	Title	Meeting attendance
Mr Donal Brosnahan	Clinical Director	4
Tommy Bracken	Chief Executive Officer	3
Dr Susan Knowles	Consultant Microbiologist	4
Dr Elaine Houlihan	Registrar Microbiologist	ML
Caroline Delahunty	COO	4
Cathriona Ennis /Jo Kearney	Nursing Administration	4
Sinead Fitzgerald	Clinical Nurse Specialist	4
Margie McCarthy	Clinical Nurse Specialist	1
Carol Fagan	Clinical Nurse Specialist	3
Carol Gaskin	CDU Manager	4
Nirmal Gompa	Quality Manager	4
Jane-Anne O'Connor	Pharmacist	3
Caroline Moynihan	Risk Manager	4
Ann Gillick	Catering Supervisor	1

## Appendix 4



### Royal Victoria Eye and Ear Hospital Terms of Reference Infection Control Committee

**Creation Date:** September 2020

**Chairperson:** Mr Donal Brosnahan (Medical Director)

**Committee Members:**

Medical Director (Chair)  
Hospital CEO  
Consultant Microbiologist  
Registrar Microbiologist  
CNS Infection Control  
Nursing Administration  
Theatre Manager  
CDU Manager  
Pharmacist  
Quality and Safety Manager  
Health and safety Manager  
Catering Manager  
NHCD

**Committee Reports To:**

Quality and Safety Executive Committee

**Frequency of Meetings:**

Four times per year

**Quorum for Meeting:**

50% of membership plus one. Meetings cannot be held in the absence of a quorum.

**Schedule of Meetings:**

Quarterly

**Distribution of Agenda and Minutes:**

- *Agenda is to take the form of matters arising from the previous minutes with a few added items at the commencement of the meeting.*
- *The agenda and any relevant supporting documents will be circulated in advance of the meeting.*
- *Minutes shall be taken of the proceedings & presented at the next meeting of the Committee for approval.*
- *A summary report will be prepared for submission to the Integrated Risk, Quality & Safety Committee*

### **Role & Objectives of the Committee:**

- Review and approve the annual infection prevention and control programme and work plan
- Advise and support the Infection Prevention and Control Team (IPCT) in the implementation of the programme
- Advise on resource requirements for the Infection Prevention & Control Programme
- To produce an annual report on Infection Prevention & Control
- To review and update Infection Prevention & Control policies and guidelines regularly
- To audit the implementation of Infection Control Policies and Guidelines
- To promote and facilitate the education of all grades of hospital staff in Infection Prevention and Control
- To participate in national healthcare associated infection surveillance programs, in addition to locally agreed surveillance systems including alert organism surveillance.
- To provide advice, education and support during outbreaks and review outcomes
- To advise on adequate resources, facilities and requirements including during outbreaks.
- To review and approve all infection prevention and control aspects of decontamination policies
- To provide relevant reports to the Quality and Safety Executive and other relevant sub committees.
- To comply with legislative requirements i.e.,
- Safety, Health, Welfare at work Act 2005.
- To support and monitor the implementation of national standards policies and guidelines.



## Appendix 5

Sink units in RVEEH 2023				HBN 00-10 sink in place			replacement required				67% sinks compliant			33% sinks non-compliant			non-clinical	
DCU	CU/16	ENT/27	HLW	A&E	RR	Eye OPD	ENT OPD	Audio	CDU	EDU	New Cataract unit	Pre-op assessment	Lab	X RAY	MTC	New Fields room	Pharmacy	
unit A x1	ward x1	Wd 30 x1	level 0 cor x1	EYE TX ROOM	Patient areas x1	Orthoptic one new sink x3	clinic 1	new sink	2	1	Admissions	Retinal room x1	x3		treatment room	treatment room x1	1	
unit B x1		Wd 29 x1	level 1 cor x1	EYE TX ROOM	Patient areas x1	Laser Room x1	Tx rm A x1	new sink	2	1	discharge	Retinal room x1		X-ray rm B x1	treatment room	treatment room x1	1	
unit B x1	Toilets x2	Wd 28 x1	sluice upstairs	EYE TX ROOM		Photographic clinic x 2	clinic 2				OT	treatment room		Ultra sound room x1	treatment room			
Tx rm B x1		Wd 27	sluice downstairs	EYE TX ROOM		PHOTOGRAPHIC ROOM X 1	clinic 3				Office			big old sink	treatment room			
sluice x1		Wd 27	bathroom B x1	ent TX ROOM		oncology rm A x1	clinic 4				Anaesthetic				MPR			
kitchen x1		toilets on end of cor x2		ent TX ROOM		oncology rm Bx1					clean utility room				MPR			
Tx rm A x1		sluice x1	7 rooms x1	ent TX ROOM		Clinic 1 x1					dirty utility room				MPR			
Office x1			bathroom A x1	Sluicex1		Clinic 2 x1												
toilets x4		kitchen x1	Room 21	Rm 10 x1		Clinic 3 x1												
Minor Procedure Room		toilets on cor x1	room 21 ensuite			Clinic 4 x1												
waiting rm x1		TREATMENT ROOM X 2	room 26	Public toilets x 5		Clinic 6, 7 8							82	77%				

Procedure rm 1 x1			ensuite 26			Treatment rm x 2							25	23%					
Procedure rm 1 x1			TREATMENT ROOM			new glaucoma clinic X 1													
treatment room						new fields clinic in basement X1													
						retinal hereditary clins x 2													
						new eye clinic rooms X 3													
3	0	1	2	0	2	10	0	0	0	0	0	2	3	2	0	0	0	0	0
8	1	7	8	9	0	15	5	2	4	2	8	1	0	1	7	2	2	2	2

## Appendix 6

### Nov DGSA findings

#### FINDINGS OF DGSA AUDIT HELD ON 05.10.23

<b>Non-Compliance</b>	<b>Recommendation</b>	<b>Action</b>	
Absorbent material was not provided in a yellow lidded healthcare risk waste bin in use in the recovery room in PACU. In accordance with packing instruction P621 of the ADR Regulations absorbent material sufficient to absorb the entire liquid contents must be fitted in rigid bins used for the disposal of liquid healthcare risk waste	Brief staff to ensure that absorbent sheets are placed in healthcare risk waste rigid bins prior to use.	Staff have been advised to ensure that absorbent material is fitted in rigid clinical waste bins.	Closed
<b>Observations</b>	<b>Recommendation</b>	<b>Action</b>	<b>Status</b>
Full opened clinical waste bins were found to be stored outside the locked clinical waste compound due to lack of space. There is no facility in the compound area for staff to wash their h	Review the possibility of expanding the main clinical waste holding compound so it can securely store all the full 770L wheeled bins as well as the biosystem cages and the special clinical waste cages.		Open
A purple lidded sharps bin was found in Theatre not correctly assembled. All four corners of the lid were not fully clipped into place	Provide additional awareness training to staff regarding the correct procedures regarding the segregation and packaging of healthcare risk waste. Ensure all sharps bins are fully clipped before use.	Staff to be reminded to assemble sharps bins correctly	Open
A 770L clinical waste bin was found to be open in the hallway in the CSSD department.	All 770L clinical waste bins kept on public corridors must be locked at all times when not in immediate attendance or else kept in a locked room labelled with biohazard signage.  Brief staff to keep 770L clinical waste bins locked when not in immediate attendance.	Risk, Health & Safety Manager to remind staff to ensure clinical waste bins on public corridors are locked.	Open
The Formalin cabinet in Theatre was not labelled with the relevant GHS signage.	Erect the relevant GHS pictogram signage for Formalin on any outstanding chemical cabinet where.	Labels to be provided	Open

## Appendix 7 Antimicrobial Stewardship

### National Antibiotic Point Prevalence Survey results for the RVEEH

In May 2023, the RVEEH took part in the European Antimicrobial Point Prevalence Survey (PPS). Data was collected for all inpatients admitted at 8a.m. on the day of audit and submitted to the HPSC.

Antibiotics and antifungals only are included. Antivirals and topical therapy are not included. Intraocular usage is not broken down; intraocular injections were submitted under the “injection” route.

See below table regarding specific antimicrobial usage for Specialist hospital.

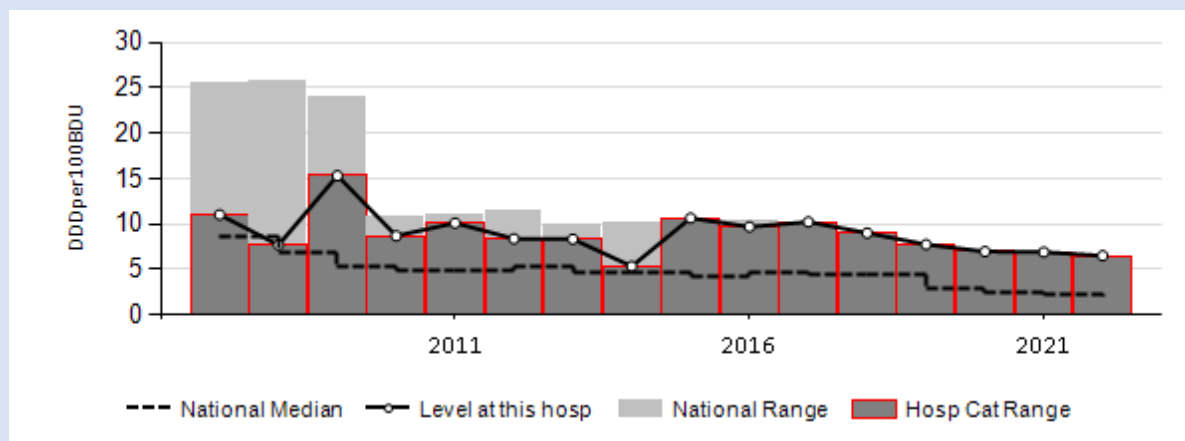
▲ **Table 18. Antimicrobials: specific (Top 10)**

Antimicrobial	Tertiary	Secondary	Primary	Paediatric	Specialist	Private	Total
Amoxicillin/ clavulanic acid	497 (16%)	454 (22%)	66 (26%)	17 (9%)	37 (14%)	175 (21%)	1,246 (19%)
Piperacillin/ tazobactam	655 (21%)	399 (19%)	47 (19%)	10 (6%)	13 (5%)	99 (12%)	1,223 (18%)
Cefuroxime	85 (3%)	77 (4%)	10 (4%)	11 (6%)	61 (22%)	159 (19%)	403 (6%)
Flucloxacillin	153 (5%)	111 (5%)	17 (7%)	5 (3%)	8 (3%)	38 (5%)	332 (5%)
Vancomycin, parenteral	148 (5%)	60 (3%)	2 (1%)	5 (3%)	9 (3%)	38 (5%)	262 (4%)
Ceftriaxone	126 (4%)	88 (4%)	5 (2%)	11 (6%)	7 (3%)	23 (3%)	260 (4%)
Metronidazole, parenteral	113 (4%)	75 (4%)	4 (2%)	2 (1%)	15 (5%)	33 (4%)	242 (4%)
Meropenem	155 (5%)	50 (2%)	7 (3%)	7 (4%)	8 (3%)	11 (1%)	238 (4%)
Clarithromycin	79 (3%)	85 (4%)	14 (6%)	1 (1%)	1 (0%)	17 (2%)	197 (3%)
Sulfamethoxazole/ trimethoprim	136 (4%)	27 (1%)	3 (1%)	9 (5%)	2 (1%)	15 (2%)	192 (3%)
Other	977 (31%)	627 (31%)	75 (30%)	101 (56%)	113 (41%)	224 (27%)	2,117 (32%)
<b>Total</b>	<b>3,124 (100%)</b>	<b>2,053 (100%)</b>	<b>250 (100%)</b>	<b>179 (100%)</b>	<b>274 (100%)</b>	<b>832 (100%)</b>	<b>6,712 (100%)</b>



<b>Title:</b>	Systemic Fluoroquinolone (FQ) Audit						
<b>Audit Team:</b>	Sinead Fitzgerald IPC CNS, Joan Dockery Senior Pharmacist, Carol Fagan IPC, Dr Susan Knowles (Consultant Microbiologist)						
<b>Location(s):</b>	In-patient wards				<b>Date(s)</b>	March-November 2023	
<b>Notified to:</b>	Drugs, Therapeutics & Antimicrobial Stewardship Committee, Infection Control Committee, Eye Group, ENT Group.						
<b>Standard(s):</b>	Internal – RVEEH Antimicrobial guidelines; External – HSE antimicrobial stewardship						
<b>Criteria:</b>	Quality and Safety – Hospitals systematically monitor the arrangements in place for medication safety to identify and act on opportunities to continually improve prescribing and use of medications, including antimicrobials.						
<b>Data collection:</b>	Retrospective	<input type="checkbox"/>	Prospective	<input checked="" type="checkbox"/>			
<b>Data source(s):</b>	Chart	<input checked="" type="checkbox"/>	Observation	<input type="checkbox"/>	Questionnaire	<input type="checkbox"/>	Other (specify below) <input type="checkbox"/>
<b>Other source(s):</b>	Review of microbiology laboratory reports						
<b>Rationale:</b>							

The HSE collects antibiotic consumption data from Irish hospitals since 2007. In the years 2015 and 2017-2022, the Royal Victoria Eye & Ear Hospital has been the highest user of fluoroquinolones (FQs) in Irish Hospitals, based on daily defined doses (DDD) per 100 bed days used. See graph below of annual systemic FQ use nationally and in RVEEH. Use of FQs has reduced nationally due to HPA alerts, adverse reactions and interactions with other medications.



As a specialist Ophthalmology and ENT hospital, FQ are specifically indicated for certain conditions. The purpose of this audit is to gather information relating to systemic FQ prescribing for in-patients in the hospital.

The data gathered is used to (i) determine whether use of a FQ is appropriate based on RVEEH antimicrobial guidelines; (ii) identify areas of prescribing practice which may benefit from intervention

### Objectives:

To identify patterns of fluoroquinolone (FQ) prescribing in the Royal Victoria Eye & Ear Hospital (RVEEH), assess appropriateness of systemic FQ prescribing among in-patients and to identify areas for intervention.

1. To determine the proportion of patients on prophylactic and treatment doses of systemic FQ
2. To determine frequency of prescribing of systemic FQ in Ophthalmology and ENT in-patients
3. To identify indications for prescribing of prophylactic and treatment doses of FQ
4. To identify proportion of prescribed doses administered via IV and PO routes
5. To identify compliance of prescribing to antimicrobial policy standards

The following patients are excluded:

1. Out-patients including A+E patients
2. Prescription of topical FQ

### Findings:

#	Criterion/requirement	Finding
1.	To determine the proportion of patients on prophylactic and treatment doses of systemic FQ	<p>The study period was from 15/3/2023 to 15/11/2023.</p> <p>A total of 22 FQ prescriptions in 21 patients were audited (1 patient had 2 separate admissions requiring FQ use).</p> <p>Systemic FQ were used for</p> <ul style="list-style-type: none"> <li>- Treatment of infection in 17 patients (77.3%)</li> <li>- Prophylaxis in 4 patients (18.2%)</li> <li>- Unknown indication in 1 patient (4.5%)</li> </ul>

2.	To determine the frequency of prescribing of systemic FQ in Ophthalmology and ENT in-patients	18 Ophthalmology patient FQ prescriptions (81.8%) 3 ENT patients had 4 FQ prescriptions (18.2%)																									
3.	To identify indications for prescribing of prophylactic and treatment doses of FQ	<table border="1"> <thead> <tr> <th>Therapeutic indication</th> <th>No. (%)</th> </tr> </thead> <tbody> <tr> <td>Endophthalmitis</td> <td>7 (31.8%)</td> </tr> <tr> <td>Corneal infection</td> <td>6 (27.3%)</td> </tr> <tr> <td>Malignant otitis externa</td> <td>2 (9.1%)</td> </tr> <tr> <td>Perichondritis / abscess</td> <td>1 (4.5%)</td> </tr> <tr> <td><i>Pseudomonas</i> otitis media</td> <td>1 (4.5%)</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td><b>Prophylaxis</b></td> <td></td> </tr> <tr> <td>Globe injury</td> <td>3 (13.6%)</td> </tr> <tr> <td><i>N. meningitidis</i> prophylaxis</td> <td>1 (4.5%)</td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td><b>Unknown</b></td> <td>1 (4.5%)</td> </tr> </tbody> </table>	Therapeutic indication	No. (%)	Endophthalmitis	7 (31.8%)	Corneal infection	6 (27.3%)	Malignant otitis externa	2 (9.1%)	Perichondritis / abscess	1 (4.5%)	<i>Pseudomonas</i> otitis media	1 (4.5%)			<b>Prophylaxis</b>		Globe injury	3 (13.6%)	<i>N. meningitidis</i> prophylaxis	1 (4.5%)			<b>Unknown</b>	1 (4.5%)	
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<b>Unknown</b>	1 (4.5%)																										
4.	To identify proportion of prescribed doses administered via IV and PO routes	<p>PO = 18 (81.8%) IV = 4 (18.2%).</p> <p>Systemic FQ use should be oral, unless patient is nil by mouth. Of these 4 patients, one was nil by mouth and IV use was appropriate. Three patients receiving IV FQ should have been on oral FQ.</p>																									
5.	To identify compliance of prescribing to antimicrobial policy standards	<p>The use of a systemic FQ was appropriate in 21/22 (95.5%) of prescriptions.</p> <p>The correct FQ was chosen in 16/21 of these prescriptions (76.2%). An incorrect FQ was chosen in 5/21 patients (23.8%) and in all of these cases Ciprofloxacin was used for treatment of endophthalmitis. Endophthalmitis is predominantly caused by gram positive bacteria and Levofloxacin or Moxifloxacin have improved activity against gram positive organisms, in particular against <i>Streptococci</i>, compared to Ciprofloxacin.</p> <p>FQ should be administered via the oral route, unless the patient is nil by mouth. Three patients (13.6%) received IV FQ when they should have been administered oral FQ.</p>																									

#### Required actions / Quality Improvement Plan:

Finding #	Action	Timeframe
1.	Submit audit report and quality improvement plan to Drugs, Therapeutics & Antimicrobial Stewardship Committee, Infection Control Committee, Eye Group, ENT Group.	By end of 2023

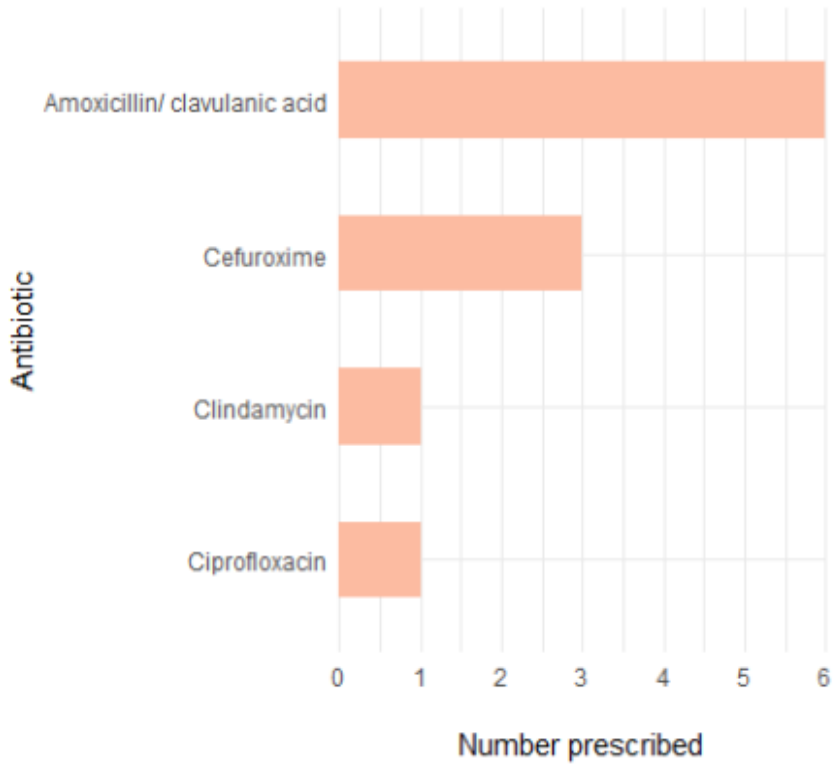
2.	Highlight correct choice of Fluoroquinolone for endophthalmitis. Write to Eye group Chair. Memo to Ophthalmology NCHD's.	By end of 2023
3.	Education for prescribers and ward nursing staff on oral use of FQ.	By end of 2023

**Table 21. AMU treatment**

	Royal Victoria Eye and Ear Hospital	Specialist	National
Total AMs prescribed	11	274	6715
<i>Prescriber's indication for AM use</i>			
Reason in notes	10 (91%)	250 (91%)	6090 (91%)
Treatment of infection:	1 (9%)	151 (55%)	5363 (80%)
Acute hospital	1 (9%)	92 (34%)	1291 (19%)
Community	0 (0%)	59 (22%)	3882 (58%)
LTCF	0 (0%)	0 (0%)	190 (3%)
Surgical prophylaxis (SP):	10 (91%)	102 (37%)	678 (10%)
SP, single dose	9 (82%)	72 (26%)	241 (4%)
SP, one day	1 (9%)	24 (9%)	237 (4%)
SP, > one day	0 (0%)	6 (2%)	200 (3%)
Medical prophylaxis	0 (0%)	20 (7%)	537 (8%)
Unknown indication/reason	0 (0%)	0 (0%)	69 (1%)
Other	0 (0%)	1 (0%)	61 (1%)
Unknown	0 (0%)	0 (0%)	7 (0%)



### Top 10 AMs in Royal Victoria Eye and Ear Hospital



<b>Title:</b>	Sepsis Audit 2023							
<b>Audit Team:</b>	Carol Fagan, IPC Nurse Dr Susan Knowles (Consultant Microbiologist)							
<b>Location(s):</b>	RVEEH patients with blood cultures and EWS ≥4 or sepsis form completed	<b>Date(s)</b>	Jan-Dec 2023					
<b>Notified to:</b>	Deteriorating Patient Committee, Infection Control Committee, Eye Group, ENT Group.							
<b>Standard(s):</b>	Internal – RVEEH Sepsis guidelines and antimicrobial guidelines External – National Sepsis Guidance							
<b>Criteria:</b>	Quality and Safety – Hospitals systematically monitor Sepsis 6 for patient care to identify and act on opportunities to continually improve							
<b>Data collection:</b>	Retrospective	<input checked="" type="checkbox"/>	Prospective	<input type="checkbox"/>				
<b>Data source(s):</b>	Chart	<input checked="" type="checkbox"/>	Observation	<input type="checkbox"/>	Questionnaire	<input type="checkbox"/>	Other (specify below)	<input checked="" type="checkbox"/>
<b>Other source(s):</b>	Review of blood culture laboratory reports							
<b>Rationale:</b>								
<p>To identify patients who had blood cultures in 2023 and review Sepsis 6 and sepsis form data.</p> <p>As a specialist Ophthalmology and ENT hospital, severe infection and sepsis is a relatively rare clinical condition.</p> <p>A sepsis form should be completed for adult patients if they have a likely infection AND either (a) INEWS ≥4 (or ≥5 if already on supplemental oxygen) or (b) INEWS &lt;4 or &lt;5 if on oxygen in an immunocompromised or older person or (c) ED sepsis screen at triage.</p> <p>The purpose of this audit is to (i) gather information relating to appropriate use of Sepsis 6 and use of the Sepsis form in in-patients and ED patients attending the hospital, according to National and RVEEH guidelines; (ii) identify areas of practice which may benefit from intervention, feedback and education</p>								
<b>Objectives:</b>								

To identify adherence to appropriate use of Sepsis 6 in the Royal Victoria Eye & Ear Hospital (RVEEH) and to identify areas for intervention and additional education.

6. To determine the number of patients attending RVEEH who had a blood culture in 2023
7. To determine the number of patients who had a blood culture who should have had a sepsis form completed
8. To identify completion of Sepsis 6
9. To identify use of and completion of the sepsis form.

The following patients are excluded:

3. Patients who did not have a blood culture
4. Patients who had a blood culture but did not qualify for completion of the sepsis form

### Findings:

#	Criterion/requirement	Finding
6.	To determine the number of patients attending RVEEH who had a blood culture in 2023	The study period was from 1/1/2023 to 31/12/2023. A total of 13 blood cultures were obtained in RVEEH and one positive blood culture was obtained in another hospital prior to patient transfer to RVEEH and is included in this audit.
7.	To determine the number of patients who had a blood culture who should have had a sepsis form completed	Eight of 14 patients (57%) should have Sepsis 6 completed and 6 patients did not meet the clinical criteria for sepsis form.
8.	To identify completion of Sepsis 6	Take 3 1. Blood cultures were obtained in all 8. However, this was the screening method used to identify patients for audit. 2. Lactate was obtained in 5/8 (62.5%) 3. Urine output was recorded in 3/8 (37.5%)  Give 3 9. Oxygen if required, was given in 4 patients and was not applicable in 4 (100%) 10. IV fluids were given in 5/8 (62.5%); however, Hartmans (CSL) is recommended and 2 of 5 received normal saline. Also 1 patient was not given a 500ml bolus and was administered 125mls/hour, which is incorrect for potential sepsis. 11. IV antibiotics were administered in all patients (100%). One patient did not receive the correct antibiotics according to RVEEH guidance.
12.	To identify use of and completion of the sepsis form.	The sepsis form was only used in 3/8 patients (37.5%) and it was only completed in 1 patient (12.5%)

### Required actions / Quality Improvement Plan:

Finding #	Action	Timeframe
4.	Submit audit report and quality improvement plan to the Deteriorating Patient committee, Eye Group, ENT Group.	By end of March 2024
5.	Highlight Sepsis 6 especially the need for (a) lactate measurement and where point of care machines are located in RVEEH (b) document good urinary output or measure it if any concerns and (c) IV fluid bolus for sepsis	By end of March 2024
6.	Education and 'skills & drills' for medical and nursing staff on sepsis 6	By end of September 2024
7.	Improve HSELand sepsis training among medical staff in RVEEH	On-going
8.	Increased awareness among RVEEH prescribers of RVEEH App for guidelines, especially at induction	On-going