

Royal Victoria Eye & Ear Hospital
Infection Control Annual Report
2020

Compiled by

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1.0 Executive Summary

This annual document reports on Infection Control activity in Royal Victoria Eye and Ear Hospital in 2020. This was a challenging year for the RVEEH, the Covid-19 pandemic, which began in March, led to widespread disruption to services. To maintain a high standard of care for our patients, new ways of delivering services were developed and implemented in a rapidly changing health service environment.

In addition to responding to the global pandemic, the hospital also underwent the third audit cycle with JCI. A remote survey took place in November and accreditation was granted immediately. This report contains details on the hospital's response to the Covid-19 Pandemic along with key findings from the After-Action Review.

Details of all other infection Control activity are also contained this report.

Key findings:

- No hospital acquired patient case of Covid -19
- Two outbreaks of COVID-19 among staff
- Covid-19 Screening clinic established by ICT: all patients undergoing general anaesthesia or any aerosol generating procedures, as well as overnight admissions, are screened prior to surgery
- All outpatients and Emergency patients are Risk Assessed prior to attending
- As well as hand hygiene audits, social distancing and PPE audits were introduced to ensure compliance with national guidelines
- Structural improvements made in many departments to limit risk of transmission of Covid-19.
- One additional en-suite bathroom installed as part of response to Covid-19
- Ventilation and HEPA-filtered negative pressure installed in high-risk areas: A&E, ENT OPD, OT and HLW
- New, purpose built Macular Treatment Unit opened
- Post-cataract endophthalmitis rate was 0.13%; the rate for microbiologically confirmed infections was 0.1%
- Post intravitreal injection endophthalmitis rate was 0.02%
- There was no hospital acquired MRSA, VRE or CPE infection

Table 1; Infection Control Risk Register

Risk	Risk to Whom	Risk Rating	Risk Category
1 Covid-19 transmission	Patient/staff	15	High
2 Ventilation in OT	Patient//Staff	8	Moderate
3 Legionella	Patient//Staff	8	Moderate
4 Hand Hygiene Sinks	Patient//Staff	8	Moderate

See Appendix 1: Analysis of Risk Register

2.0 Introduction

Healthcare associated infections can cause harm to patients, compromising their safety and leading to suboptimal patient experience; therefore, prevention of HCAI remains a key priority for the hospital. The Infection Prevention Control Team (IPCT) strives to promote and embed evidence based best practice with regards to the prevention and control of infection and maintain patient safety. The IPCT also recognise that Infection Control is everyone's responsibility and must remain a high priority for all staff to ensure that patients are safe from acquiring a HCAI.

This is achieved by:

- Ensuring that there are effective governance structures with clear lines of accountability and oversight so that all staff are aware of their responsibilities and to whom they are accountable
- Providing the necessary resources are in place to support the effective delivery of quality care and support to people using the service
- Developing and implementing policies and procedures that will make sure the hospital runs effectively. *See Appendix 2: Policies developed and updated 2020*
- Continual monitoring of services and consulting with all relevant disciplines of staff.
- Good working relationships across clinical services and between directorates.

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

2.1 Governance

The IPCT is comprised of a Consultant Microbiologist and two Clinical Nurse Specialists Infection Control who share one whole time equivalent (WTE) position. A Surveillance Scientist, based in the National Maternity Hospital, contributes to the surveillance service in RVEEH. A work plan and IPCT programme is developed annually *See Appendix 3: IPCT Work Plan and Programme 2020*

The IPCT has representation on the following committees.

- Infection Prevention & Control committee (IPCC)
- Drugs Therapeutics & Antimicrobial Stewardship Committee
- Risk, Health & Safety Committee
- Facilities Committee

The IPCC is chaired by the hospital's Clinical Director, Mr Donal Brosnahan. It is a multidisciplinary committee which meets quarterly. The committee ensures that there are effective systems in place to reduce the risk of infection and where infection occurs to minimise its impact on patients, visitors and staff. At the outbreak of the Pandemic in March 2020, the Outbreak Control Team was convened. This multidisciplinary team met via Zoom and Teleconference at least weekly until May and then as required.

See Appendix 4 &5: Committee membership, attendance, and Terms of Reference 2020

2.2 Accreditation

The Hospital has sought to have its standards reviewed and accredited by US-based Joint Commission International (JCI). In 2020 the hospital underwent its third review. A remote survey was conducted by inspectors from the JCI organisation in November. The purpose is to review all aspects of the Hospital's activities. At each review, the bar is set higher than the previous one. We were once again awarded JCI accreditation, one of only two public hospitals in Ireland to receive such external accreditation.

3.0 Surveillance

Standard 2.0 Structures, systems and processes are in place to effectively manage and implement the IC programme to Prevent and Control Healthcare Associated infections.

Standard 9.0 Microbiological services are available in a timely and effective manner to support the service to prevent and control Healthcare Associated infections

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

Table 2 HSE KPIs for RVEEH

RVEEH KPIs	RVEEH 2017	RVEEH 2018	RVEEH 2019	RVEEH 2020
Staph aureus blood stream Infection per 1000 bed days used (BDU)	0	0	0	0
HCAI C. difficile infection per 10,000 BDU	1.9	0	4.5	0
Antibiotic consumption (daily defined doses per 100 BDU)	43.4	37.4	48.1	43.9 (Q1-2)
HSE hand hygiene audit compliance ($\geq 90\%$)	May 89.5 % Nov 89.7 %	May 89. % Nov 91.4%	May 90% Nov 91%	Nov only 91.5%
New CPE cases	0	0	1	0
Meropenem prescribed	Meropenem 52G	Meropenem 68G	Meropenem 1G	Meropenem 0G

- Surveillance in RVEEH includes:
 - Hospital acquired infection
 - Antimicrobial resistance
 - Surgical site infections
 - Patient device related infection
 - Notifiable infectious disease

Table 3 - RVEEH KPI's

HCAI Key Performance Indicators	Target	2016	2017	2018	2019	2020
Rate of post-operative endophthalmitis <i>Elective cataract surgery</i>	≤0.1%	0.04%	0.03%	0.14%	0.15%	0.13%*
Rate of endophthalmitis <i>Intravitreal injection</i>	≤0.05%	0.05%	0.01%	0.02%	0.01%	0.02%
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	3	2	2	0	0
PVC related blood stream infection	≤1	0	0	0	0	0
Urinary catheter BSI	≤1	0	1	0	0	0
HAI pneumonia - tracheostomy patients	≤2	1	0	1	1	1

**Infectious and inflammatory post cataract endophthalmitis rate = 0.13%; No organism was identified in one patient; Three cases were microbiologically confirmed (rate = 0.1%): One case each of Staph epidermidis, Staph epidermidis + Aspergillus species and Strep pneumoniae.*

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

3.2 Multi-Drug Resistant Organism

3.2.1 MRSA screening is requested prior to admission on all patients in an at-risk category. The profile for 2020 is highlighted in table 4

Table 4: MRSA Screening

	2016	2017	2018	2019	2020
No. of MRSA screening swabs	5,258	6,180	7,077	6,953	4344
No. of patients tested	1,129	1,165	1,444	1,462	918
Number of MRSA positive results (%)	94 (8.3%)	100 (8.5%)	95 (6.5%)	63 (4.3%)	35 (3.8%)
Number of previously known carriers (%)	48 (51%)	57 (57%)	49 (51.5%)	25 (39%)	10 (25%)
No. of MRSA HCAI	0	0	0	0	0
MRSA decolonisation	39%	42%	41%	38%	50%

22% MRSA positive results identified from patients presenting in A&E.

20% MRSA positive results identified from OPD & In-patients ward & Cataract Unit

42% MRSA positive results identified from pre op assessment

16% MRSA positive results identified from the Day Care Unit

Patients who fit the criteria are screened for MRSA at pre-assessment.

Positive results are reported to the ICT directly from Microbiology lab in NMH.

IPCT liaises with patient /Nursing home or family member as appropriate to ensure decolonization takes place prior to surgery.

Intracameral vancomycin 1mg is administered as antibiotic prophylaxis to patients undergoing cataract surgery had a history of MRSA.

3.3 Vancomycin Resistant Enterococci (VRE)

	2017	2018	2019	2020
VRE Colonisation	5	29	18	6
VRE Infection	0	0	0	0

3.4 Carbapenem Producing Enterobacteriaceae (CPE)

CPE screening is carried out on all patients fitting the criteria based on National Guidelines.

	2018	2019	2020
Number of CPE screens	429	580	459
Number of New CPE	0	1	0
Number of Known CPE patients attending RVEEH overnight	4	2	0
Number of CPE infections	0	0	0
Number NOT isolated in en-suite room	4	2	0
Meropenem Use (g)	68G	1G	0G

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

3.5 Antimicrobial Consumption and Stewardship 2020

- Hospital Antibiotic Consumption Data Collection is collated monthly by pharmacy and submitted to the Health Protection Surveillance Centre (HPSC). Annual review for 2020 is expected later in 2021.
- National/ European Antibiotic Point Prevalence Survey; Single day antibiotic data collated and compared with other hospitals nationally and EU wide
- Snap-shot antimicrobial prescribing audits; The infection control team, microbiology consultant and pharmacists complete in-house antimicrobial stewardship (AMS) ward rounds throughout the year. The objective of these ward rounds is to identify patterns of antimicrobial prescribing in RVEEH, assess appropriateness of antimicrobial prescribing and to identify areas for intervention and improvement. Results from these ward rounds are collated through the MEG Audit Support Tool (smart phone application). *See Appendix 6: Summary of Antimicrobial Stewardship Ward Rounds for 2020*
- Resistance Data; Local and National patterns used to inform Antimicrobial Guidelines
- Circulation of Antibiotic safety notices; From HPRA and EMA
- Incident Reporting; Monitors trends in antibiotic related incidents
- This data is discussed at the Hospital's Drugs, Therapeutics & Antimicrobial Stewardship Committee (DTAMSC).
- The RVEEH were one of fifty hospitals in Ireland to take part in an ECDC Point Prevalence Survey (PPS) of antimicrobial use and health care associated infections carried out on October 8th 2020. *See Appendix 7: Report on PPS 2020*

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

- Sepsis is defined as life-threatening organ dysfunction caused by a dysregulated host response to infection.
- There were no reported cases of sepsis in RVEEH in 2020
- The Surveillance Scientist contributes RVEEH blood stream infection data to the European Antimicrobial Resistance Surveillance Network (EARS-Net).
- On line sepsis training is mandatory for all staff members.
- Sepsis is discussed as an agenda item at the DTAMSC

3.7 Incidence of Common Transmissible Organisms

Table 5: Common Transmissible Organisms in RVEEH

	2016	2017	2018	2019	2020
Acanthamoeba (ocular)	2	5	3	5	5
Adenovirus (ocular)	104	108	99	109	27
Blood stream infections BSI	1	2	0	1	0
Sepsis	1	1	0	3	0
Chlamydia (ocular)	10	25	18	20	16
Clostridium difficile	0	1	0	2	0
Gonorrhoea (ocular)	3	4	2	4	1
Group A Streptococcus	11	11	15	15	9
HIV	0	1	0	0	1
MRSA - healthcare acquired colonisation	0	0	0	0	0
MRSA - HCAI acquired infection	0	0	0	0	0
Norovirus	1	0	0	0	0
Syphilis (recent infection)	2	1	1	5	3
Toxoplasmosis	1	0	1	0	1
TB Pulmonary	1	0	0	0	0
TB Extra-pulmonary (neck node & ocular)	3	4	4	4	3

3.8 Surgical Site and Device Related Infection

3.8.1 Post-Operative Endophthalmitis

Post- cataract endophthalmitis is defined as an inflammation or infection of the intraocular space diagnosed within three months of the operation. There were 2,954 cataract operations carried out in 2020. There were four cases of clinical endophthalmitis post-cataract surgery (rate = 0.13%). The IPCT investigated all cases to establish any epidemiological link and to determine any risk factors for infection.

Investigations found cases were not linked to any particular surgeon or any decontamination failure.

No organism identified in one sample

There were three microbiologically confirmed infections (rate = 0.1%): *Staph epidermidis*, *Staph epidermidis* + *Aspergillus* species and *Strep pneumoniae*.

All patients were admitted and treated with the appropriate intravitreal and systemic antibiotics.

Conjunctival disinfection with 5% povidone-iodine is used with a contact time of three minutes.

Table 6: Post-Operative Cataract Endophthalmitis, post-op intravitreal injection infection and post op ocular infections

Eye Surgery	2017			2018			2019			2020		
	Total	Infected cases	%	Total	Infected cases	%	Total	Infected cases	%	Total	Infect ed cases	%
Cataract Surgery	2,825	1	0.03%	4,123	6	0.14%	3,926	6	0.15%	2,954	4	0.13%
Other Eye Surgery	1,985	4	0.20%	2,929	4	0.13%	3,231	5	0.15%	2603	2	0.11%
ALL Intravitreal Injections	6,449	1	0.01%	7,660	7	0.1%	8,308	1	0.01%	8780	2	0.02%

3.9 ENT Surgery

Table 8: ENT surgery

	2018			2019			2020		
	Total	Infected Patients	%	Total	Infected Patients	%	Total	Infected Patients	%
Parotidectomy				12	2	16.6%	5	0	0
Fess							81	1	1.2
Removal of ear cyst	10	1	10%				0	0	0
Biopsy from preauricular lesion							18	1	5.6
Tonsil biopsy							88	1	1.1
Thyroid & parathyroid surgery	71	1	1.4%	26	1	3.8%	76	0	0
Septoplasty	105	1	0.9%				64	0	0
Mastoid surgery	73	1	1.3%	56	1	1.78%	71	0	0
Tympanoplasty surgery	35	1	2.8%				45	0	0
Nasal Surgery							16	1	6.2
Submandibular gland excision+/-R/O stone					1		46	1	2.2
Total ENT surgery	2,365	5	0.21%	2,645	5	0.18%	1,916	5	0.3%

4.0 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. 92% percent of RVEEH staff who have interaction with patients received hand hygiene education and training during the two-year period 2019-2020. Audits of Hand Hygiene practice are carried out regularly throughout the hospital, more often in high-risk areas. At least three clinical areas are observed monthly. Results are fed back directly to clinical area manager and then further discussed at quarterly ICC meeting. In May and October hospital wide audits are carried out in seven areas. These are submitted to the HPSC and results are published nationally. In 2020 results were 92.5%. See *Appendix 8: Hand Hygiene Audit Results*.

4.2 Infection Control Audits

The ICT audits all areas of the hospital regularly to identify problems that may lead to increased risk of infection or harm to patients and staff. Audits are based on elements of Standard Precautions for the prevention of HCAI. The introduction of an electronic Application developed by Medical E Guides (MEG) for auditing, has improved the quality of audits and enabled the ICT to provide a targeted feedback to department managers. Issues identified through audit are fed back to department managers at time of audit. Depending on nature of issues, Contract cleaning services are notified and where necessary Chief Operations Officer is notified. See *Appendix 9: Infection Control Audit Results*.

4.3 Dangerous Goods Safety Advisor (DGSA)

The hospital was audited by the DGSA in October 2020. Normally two audits per year take place but due to Covid-19, only one was carried out this year. The overall level of compliance with relevant regulations and associated guidelines including the Safety, Health and Welfare at Work was found to be good. There were no non-conformances identified during these audits. All observations noted were actioned and closed out.

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

5.1.1 Water Quality & Legionella Prevention

Industrial Water Management (IWM) is the company responsible for managing and maintaining the water system in the hospital. Due to the nature of the building with its aged infrastructure, it is necessary to ensure that there are controls in place to minimise the risk of legionella in the hospital's water system.

Controls in place include.

- Weekly flushing of infrequently used water outlets. This is carried out throughout the hospital. Documentation is held with the cleaning supervisor.
- Monthly water temperature monitoring.
- Quarterly shower head cleaning carried out by IWM.
- Quarterly quality testing for indicator organisms ie. legionella and total viable counts.
- Annual cleaning of water storage tanks
- Annual thermostatic monitoring valve (TMV) servicing
- Electronically controlled disinfectant dosing in water storage tanks at both east and west of building
- Copper silver ionization treatment in the middle storage tank. This tank provides water for all theatres on the second floor.

Additional work carried out in 2020;

- Removal of water tank from A&E. This tank was very old and also located on the adjacent building. Water supply for A&E is now directly from the mains.
- Two smaller water tanks located above the eye OPD were removed and replaced with one larger tank.
- Lids on all three main tanks were replaced.

Most legionella samples returned negative in 2020, with the exception of one outlet located in the west end of GF. The result was a low positive (200cfu/L) and follow up action required was carried out.

5.1.2 Operating Theatre Environmental Monitoring

As there is no specialised ventilation in the five theatres on first floor, air quality is monitored quarterly using settle plates.

The IPCT recommend that an independent report regarding the installation of ventilation into the five theatres on the first floor be completed.

In 2019 HMG were in discussions with HSE estates, seeking expert engineering advice regarding the installation of conventional ventilation into these theatres.

Plans regarding operating theatre developments are being discussed at hospital management level. Theatre development is a high priority for the hospital board.

In response to Covid-19, negative pressure HEPA filtered ventilation with at least 10 air changes per hour was installed into both ENT theatres as well as 2 eye theatres in 2020.

HEPA filter ventilation units were also fitted on the theatre corridor.

Air sampling was increased immediately following installation of these units. Bacterial counts remained similar and, in some cases, lower when compared to previous bacterial counts.

See Appendix 10: Results of OT bacterial counts.

5.2 Facilities Projects

While the infrastructural challenges of an older building are accepted, the RVEEH as an acute hospital, providing surgical and other services, strives to continue to improve the infrastructure and environment. Many of the infrastructural improvements that took place in RVEEH in 2020 were as part of the hospital's response to the Covid Pandemic

These include;

- Conversion of single room in HLW to en-suite
- Installation of negative pressure ventilation systems in areas of hospital where high risk, aerosol generating procedures are performed. These include HLW, ENT OPD, A&E.
- Painting schedule on going in all departments
- Installation of four HEPA filtration air handling units in Theatre Department.
- Macular Treatment Unit, in purpose built modular unit opened adjacent to Eye OPD
- All departments underwent changes to capacity to ensure safe social distancing. Waiting areas etc. have been adapted to ensure safe social distancing can take place.
- Installation of Perspex screens or other physical barriers to minimise risk of spread of Covid-19, including slit-lamps.
- HBN-00-10 compliant sinks installed in clinical areas where upgrading works took place. The IPCT recommend all clinical hand hygiene sinks in the RVEEH be upgraded to comply with recommended standards. Old, non-compliant and infrequently used sinks were removed from areas where upgrading works took place.

See Appendix 11: Sink Upgrade Plan 2020

6.0 Covid-19 Pandemic and RVEEH response

The WHO announced the Global Pandemic in March 2020. This caused major disruption to the delivery of healthcare in the hospital setting. National guidelines designed to prevent the spread of Covid -19 led to major reduction in services with all elective surgery cancelled in the early stages.

The RVEEH's response to the pandemic has been a multi-disciplinary team effort. One of the first steps taken by the ICT was the convening of Outbreak Control Team meeting. This meeting was attended by the senior management, both clinical and administrative, and all department heads, thus ensuring an effective team leading the preparation for our pandemic response.

Weekly team meetings continued to take place via teleconference, throughout the first months of the pandemic and into the summer of 2020.

The priority was to provide efficient leadership to ensure that service continued where possible and, once permitted, that care was delivered in such a way as to protect patients and staff alike.

Patient care guidelines, hospital policies and isolation recommendations were developed and adapted according to national guidelines from the HSE and other national bodies. The IPCT played a key in educating and preparing frontline staff to provide safe patient care while protecting themselves and their families. Initiatives to increase staff education and conserve personal protective equipment were implemented and testing for patients and symptomatic staff was introduced immediately.

Initially all Covid-19 samples were tested in the NVRL and the Rotunda Hospital. SARS CoV-2 testing began at the Microbiology lab in NMH in April. During the year capacity increased as new analysers were verified. This allowed services to increase as more patients could be tested prior to surgery.

As services resumed, the IPCT conducted screening on all patients, before establishing a screening clinic in the pre-assessment department in September.

In all, there was one positive in-patient in RVEE and twenty-six staff tested positive for Covid-19 in the first wave. See Appendix 11 for After Action Review, which details the hospital's response to Covid-19, and outlines the changes made that allows us to continue to provide a high standard of care in a safe manner.

Table 9: Covid Test Data

Covid-19 tests performed in 2020	2,174
Covid-19 positive in-patients	1
Covid-19 positive pre-op patients	9
Covid-19 positive staff	26

Appendix1; Analysis of Infection Control Risk Register

Covid-19 Transmission

Risk Transmission of Covid-19 to staff and patients

Controls Since the beginning of the global pandemic in March 2020, the ICT has introduced policies and procedures to reduce the risk of transmission to patients and staff.

Directives from the HSE and HPSC were followed and where necessary, new policies were developed. Education around Social distancing, Hand Hygiene, PPE compliance, Cough etiquette was provided for all staff. Posters and display banners were presented in all departments. *See Appendix 12: After Action Review, detailing all controls in place to mitigate risk.*

Ventilation in OT

Risk The ventilation system in the 5 first floor operating theatres does not meet internationally recognised standards for operating theatres. This increases the risk of post-operative infection. The situation has been highlighted to the HSE, the Hospital Management Group (HMG), the Medical Board and Council in the past. The IPCT recommends that Operating Theatres' design should comply with HBN 26: Facilities for surgical procedures in acute hospitals and HTM 03-01: Specialised ventilation for healthcare premises. The design should have appropriate ventilation with a minimum of 25 air changes per hour. The instrument set-up area should be dedicated for use and have 35 air changes per hour. Standards require appropriate pressure differentials between adjacent rooms in the theatre department to minimise airborne contamination of clean areas.

Controls In order to minimise risk of transmission, four HEPA filter air handling units have been installed, two on the ENT OT corridor and two in the Eye OT corridor. Additionally, negative pressure ventilation with air changes has been installed in ENT OTs and Eye OTs.

Isolation Room

Risk Transmission of Infection due to inadequate isolation facilities.

Controls The IPCT has advised on the need for en-suite single rooms or isolation purposes for many years. A second en-suite room was built in 2020. This will be prioritised for patients with transmissible diseases, especially enteric organisms. One single room also has negative pressure ventilation. Where additional en-suite rooms are required and not available, the IPCT advises staff to dedicate a bathroom for single patient use.

Risk of Legionnaires Disease

Risk: The water system in the RVEEH is old and complicated. This challenges standard Legionella controls. Factors contributing to this include:

1. Structural deficiencies in the hospital plumbing system.
2. Very long lead in pipe works to some outlets without returns.
3. Some uninsulated pipes with hot and cold running side by side.
4. A large number of infrequently used outlets.

Controls: See Section 5.1.1 for Legionella Controls

Hand Hygiene Sinks

Risk A lot of existing sinks do not conform to the current 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 to comply with HBN 00-10 Part C standard is on-going. Hand wash sinks that comply with this standard were installed in the two new glaucoma clinics. The IPCT recommends the use of alcohol hand sanitizer in areas where there are inadequate or insufficient hand washing sinks. 63% of RVEEH hand hygiene sinks are now compliant.

Appendix 2: Policies, Procedures and Guidelines updated in 2020

<ul style="list-style-type: none">• PPGS-IPCT-3	Refer to Q pulse for approval date
<ul style="list-style-type: none">• PPGS-IPCT-4	
<ul style="list-style-type: none">• PPGS-IPCT-7	Refer to Q pulse for approval date
<ul style="list-style-type: none">• PPGS-IPCT-12	Refer to Q pulse for approval date
<ul style="list-style-type: none">• PPGS-IPCT-16	
<ul style="list-style-type: none">• PPGS-IPCT-20	Refer to Q pulse for approval date
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<ul style="list-style-type: none">• PPGS-IPCT-43	
<ul style="list-style-type: none">• PPGS-IPCT-47	Refer to Q pulse for approval date
<ul style="list-style-type: none">• PPGS-IPCT-48 (new policy-COVID-19)	Refer to Q pulse for approval date
<ul style="list-style-type: none">• PPGS-IPCT-51	

Appendix 3: Infection Prevention & Control (IPC) Plan for 2020

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 Education forms a very important part of the Infection Control Program.</p>	<p>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:</p> <p>1. Provide Hand Hygiene education including demonstrations and lectures for all clinical staff annually. Hand Hygiene education is appropriate for grade of staff. Second week in <u>January</u> and <u>July</u> for NHCD at their induction. All other new clinical staff receives 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. Hand Hygiene awareness days are held during the year as part of the Hand Hygiene Education Program. This includes demonstration and analysis of technique using ultraviolet light box. Education is evaluated through questionnaire and observational audit. Prompts are provided in the form of posters and leaflets in all departments.</p> <p>2. Provide general infection control education 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-take in the IV management study day and the mini eye course run by the RVEEH school of nursing</p> <p>3. Ensure all staff aware of procedure for accessing Infection Control Policies information and on hospital intranet.</p> <p>4. Provide advice and updates on matters relating to IPC to all relevant clinical staff give advice and support regarding IPC policy and related issues.</p> <p>5. Author of 'Infection Surveillance newsletter' Provide updates for 'Bugs & Drugs' newsletter.</p>	<p>SF/MMcC</p> <p>SF/MMcC</p> <p>SF/MMcC</p> <p>SF/MMcC</p>	<p>Jan 2020</p> <p>Hand Hygiene education expanded to provide additional education to all staff in light of pandemic All staff received training in PPE, donning and doffing. Staff in high risk areas *(OT and ENT) received additional mask fit testing for FFP2 masks. Additional education in response to pandemic Social distancing, Respiratory etiquette, Guidelines on self isolation and how to quarantine.</p> <p>IPCT kept staff up to date on latest algorithms/ guidelines/newsletters from HSE and HPSC</p>
<p>Develop and review infection control policies, procedures and guidelines in accordance</p>	<p>See Q-Pulse for "Active" dates and "Revision" dates</p>	<p>SF/MMcC</p>	<p>All existing IC policies updated</p>

with legislation and evidence-based practice. Policies updated in 2020 See Appendix 2			according to expiry date. New Policies developed in response to Pandemic, see below
Infection Control Audits of practice and facilities	<ul style="list-style-type: none"> • Monthly IV care bundle audit. • Catheter care bundles when relevant. • Tracheostomy care bundle audit when relevant. • HST audits of facilities <p>Compile summary of outstanding issues. Report to relevant committees on outstanding issues. Distribute results and feedback of the audits to all relevant CNMs and Heads of Departments.</p> <ul style="list-style-type: none"> • Monthly observational hand hygiene audits to be carried out in three clinical departments. Re-audit where necessary. Disseminate hand hygiene audits to relevant clinical staff and heads of Departments. • Larger bi-annual hand hygiene audits to be carried out in clinical departments in the hospital. The results will be submitted to the HPSC in May and Nov 	SF/MMcC SF/MMcC	Completed monthly Audits expanded to encompass response to pandemic. Social Distancing Preparation for Second Wave PPE availability Completed in November
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"> 1. Daily ward based and laboratory surveillance 2. Collect, analyses and report post-operative endothermalitis infection rates. 3. Collect, analyze and report data on infections and antibiotic resistant organisms 4. Collect and report data on statutory notifiable diseases 5. Collect and report data to the European Antimicrobial Resistance Surveillance Network (EARS-Net) 6. Collect and report data on alcohol gel use. 7. Collect and report data on antibiotic consumption. 8. Distribute quarterly surveillance reports to Infection Control Committee 9. Distribute quarterly or as required surveillance reports to all relevant clinical staff. 	SF/MMcC SF/MMcC SK JAOC SF/MMcC	Surveillance expanded to include Risk Assessment for Covid-19 Performing Naso Pharyngeal swab tests on staff as requested All data on results reported to Occupational Health (Med Mark) HSE data to id notifications and weekly reports to HPSC via Acute BIU Daily reports to IEHG via dashboard Data re covid testing stats disseminated to all relevant staff.
Investigate and lead on outbreak management	Monitor and control outbreaks in a timely manner. Provide information to staff and patients as required		See section 6.0 for details of hospital response to Covid-19 Pandemic

			Outbreak Control Team bi-weekly, weekly meetings in first wave.
Identify infection risks and advise on appropriate action to prevent or minimize these risks	Liaise with patients, GPs and medical teams regarding patients colonized and infected with transmissible diseases or organisms. Analyze Infection Control related incidents and follow up to prevent these risks occurring in the future.	SF/MMcC	See section 6.0 for details of hospital response to Pandemic
Provide advice and support regarding infection prevention and control policy and related issues	<ul style="list-style-type: none"> • Patient isolation • Antimicrobial utilisation and antimicrobial resistance • Decontamination • Facilities and engineering, including new facilities, renovation, ventilation and water • Catering services • Household service • Laundry service • Waste management 	<p>SF/MMcC</p> <p>SF/MMcC</p> <p>SF/MMcC</p> <p>SF/MMcC</p>	Completed throughout the year by ICT
Attend regular meetings and educational seminars relevant to infection prevention and control	<ul style="list-style-type: none"> • Infection Control Committee • Infection Control Team meetings • R H&S Committee • Drugs, therapeutics and Antimicrobial stewardship committee • Health & Safety Committee • Facilities Committee • IEHG IPC meetings 	SF/MMcC	Transitioned from face-to-face meetings to Zoom and Teleconferences from outbreak of Pandemic in March 2020 See Appendix 4 for schedule of meetings and minutes etc.
Produce an annual work plan and annual report	IPC Work Plan 2020		

SF = Sinead Fitzgerald, Infection Control Nurse; MMcC = Margie McCarthy, Infection Control Nurse, SK = Susan Knowles, Consultant Microbiologist,

Signed _____ Date _____

Appendix 4: Membership of Infection Control Committee 2020

Committee Members	
Acting Chief Executive Officer	Tommy Bracken
Clinical Director	Donal Brosnahan
Consultant Microbiologist	Dr Susan Knowles
Nursing Administration	Cathriona Steele
Clinical Nurse Specialist	Sinead Fitzgerald
Clinical Nurse Specialist	Margie McCarthy
Director of Finance	Sharon Gaffney
Quality Manager	Jeason Kanagaraj
Risk Manager	Caroline Moynihan
Theatre manager	Natch Jagatheesan
Chief Pharmacist	Jane Anne O' Connor
Pharmacist	Niamh Dillon
Audrey Drew	Staff nurse
Deirdre Coroon	CNM 2
Tina Sheridan	HLW CNM 2
CDU & EDU Manager	Carol Gaskin
Catering Supervisor	Ann Gillick
ENT NCHD	Dr Lulianna Moariu

Following the declaration of a Global Pandemic in March 2020, all meetings were conducted via Zoom or Teleconference. The quarterly Infection Control Committee Meetings were replaced with bi-weekly, and eventually weekly teleconferences. Minutes and Agenda are with ICT.

Appendix 5: Terms of Reference - Infection Control Committee

Chairperson: Mr Donal Brosnahan Medical Director

Committee Members:

Consultant Microbiologist	CNS Infection Control	
Nursing Administration	Theatre Manager	CDU Manager
Pharmacist	Health & safety Manager	Catering Manager
Finance Director	Quality Manager	A&E Manager
ENT Registrar	In-patient Nursing Manager	

Committee Reports To: Risk Health & Safety Committee

Frequency of Meetings: Four times per year

Schedule of Meetings: Quarterly

Quorum for Meeting: 50% of membership plus one.

Distribution of Agenda and Minutes:

- The agenda and any relevant supporting documents will be circulated in advance of the meeting.
- Minutes shall be taken of the proceedings & action and will be 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
- 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 produce and review 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 schemes, in addition to locally agreed surveillance programs including alert organism surveillance
- To provide advice and support during outbreaks and review outcomes
- To review and approve all infection prevention and control aspects of decontamination policies
- To provide relevant reports to Quality, Risk, Health & Safety
- 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 6: Summary of Antimicrobial Stewardship Ward Rounds for 2020

The infection control nurses, microbiology consultant and pharmacists complete in-house antimicrobial ward rounds throughout the year. The objective of these ward rounds is to identify patterns of antimicrobial prescribing in RVEEH, assess appropriateness of antimicrobial prescribing and to identify areas for intervention. Results from these ward rounds are continuously collated through the MEG Audit Support Tool. Following feedback provided to the developers, the audit collection tool has been tailored to RVEEH requirements and has been used since 2019 for gathering data.

Antimicrobial Stewardship ward rounds were postponed during the period of COVID-19 pandemic when hospital services were reduced, elective procedures were cancelled and additional staff presence on ward was minimised to reduce risk of viral spread. Due to this, total ward round output for 2020 was reduced compared to 2019. A re-audit of the 2018 ENT surgical antimicrobial prophylaxis took place December 2019 – July 2020.

- Antimicrobial ward rounds; 1 national point prevalence survey
 - Appropriate doses used, and allergies completed for both patients
 - 50% compliance with guidelines
 - cefalexin PO for UTI – appropriate first line treatment
 - ciprofloxacin PO for corneal laceration – only topical therapy indicated in antimicrobial guidelines

Appendix 7; National Antibiotic Point Prevalence Survey

In October 2020, RVEEH took part in the National 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. The content of this survey differs slightly from the AMS ward rounds carried out in RVEEH as it does not include antivirals (antibiotics and antifungals only) or topical therapy and does not breakdown intraocular usage (intraocular injections were submitted under the “injection” route).

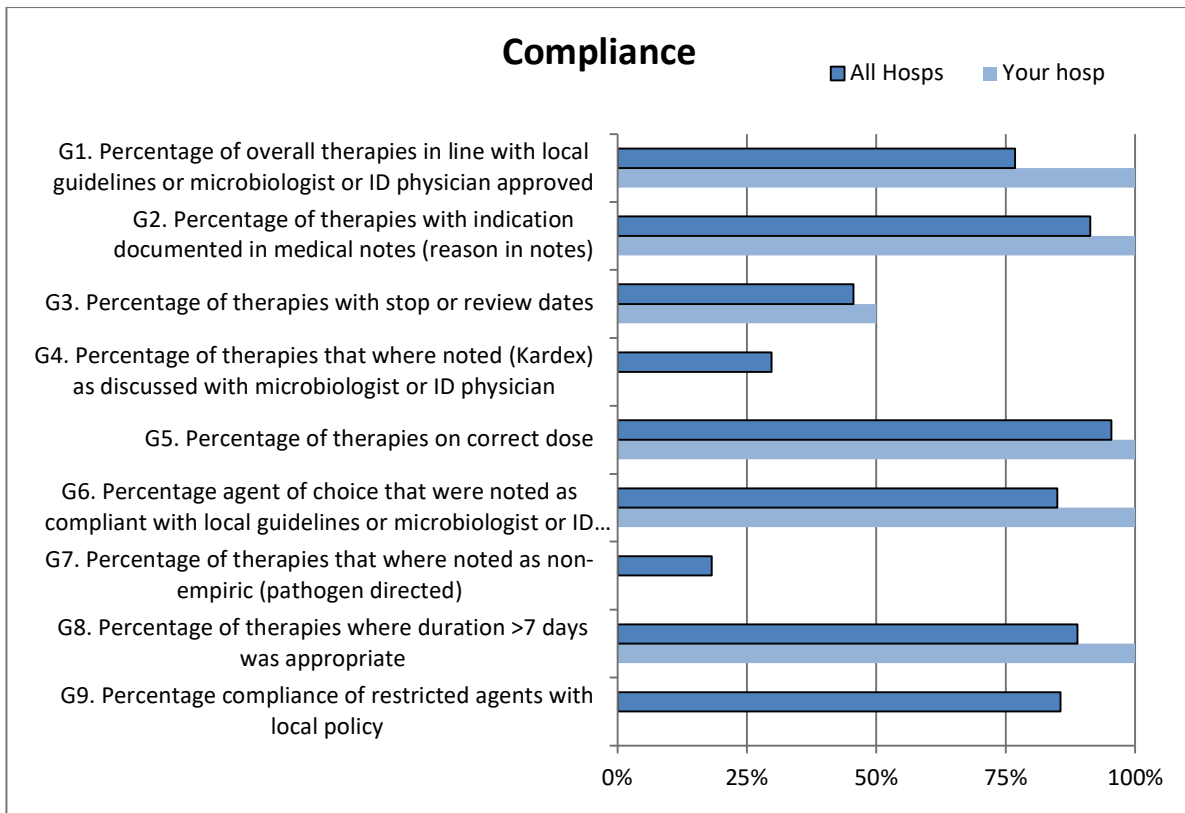
Results

On the day of survey RVEEH antibiotic prescribing (15.4%) was well below the national median prevalence (40%), acknowledging the small sample size on the day.

Other observations:

- 66.6% IV antibiotics; 33.3% Oral antibiotics
- 100% of surgical prophylaxis was single dose only
- 50% had stop/start review date specified
- Allergy status was documented for 100% of patients

The table below shows RVEEH compliance compared to the national average results.



Appendix 8; Results of Hand Hygiene Audits

Appendix 8: Hand Hygiene Observational Audit: Hospital-Specific National Audit Results by Period

Royal Victoria Eye and Ear Hospital, Dublin, Period:20 ready for approval

Overall Hand Hygiene Compliance

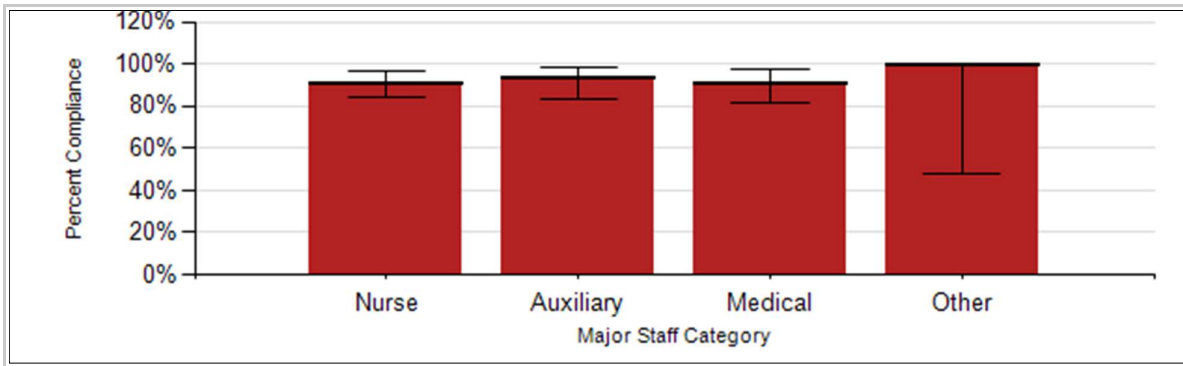
	Hand Hygiene Opportunities	Hand Hygiene Actions	Percent Compliance	Lower Confidence Interval	Upper Confidence Interval
Overall Compliance	210	194	92.4%	87.9%	95.6%

Compliance by Ward at Specific Time Points

Ward-audit Name	Hand Hygiene Opportunities	Hand Hygiene Actions	Percent Compliance	Lower Confidence Interval	Upper Confidence Interval
A&E [020] November-2020	30	27	90.0%	73.5%	97.9%
Childrens Ward [020] November-2020	30	28	93.3%	77.9%	99.2%
Day Care Unit [020] November-2020	30	27	90.0%	73.5%	97.9%
Harvey Lewis Wing HLW [020] November-2020	30	28	93.3%	77.9%	99.2%
MPR minor procedure room [020] November-2020	30	28	93.3%	77.9%	99.2%
PACU post anaesthetic care unit [020] November-2020	30	27	90.0%	73.5%	97.9%
West Wing [020] November-2020	30	29	96.7%	82.8%	99.9%

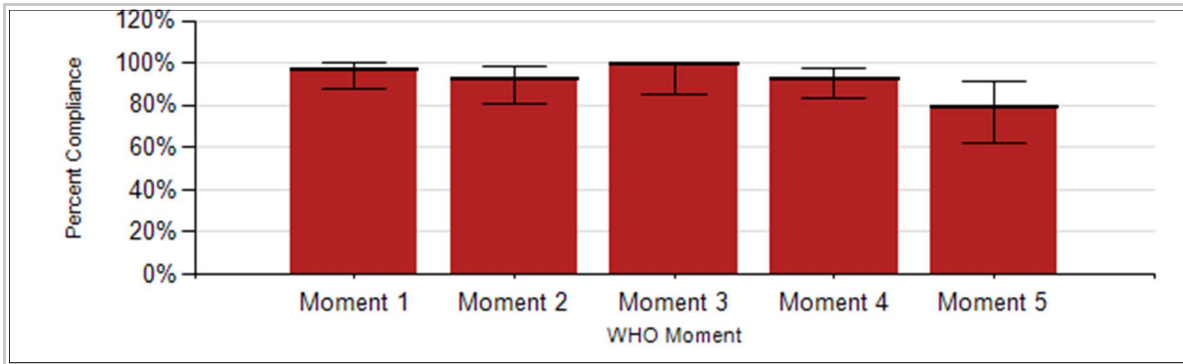
Compliance by Major Staff Category

Major Staff Category	Hand Hygiene Opportunities	Hand Hygiene Actions	Percent Compliance	Lower Confidence Interval	Upper Confidence Interval
Nurse	95	87	91.6%	84.1%	96.3%
Auxiliary	50	47	94.0%	83.5%	98.7%
Medical	60	55	91.7%	81.6%	97.2%
Other	5	5	100.0%	47.8%	100.0%



Compliance by the WHO Five Moments. Note that there may be more than one indication per opportunity

Moments	Indication	Hand Hygiene Opportunities	Hand Hygiene Actions	Percent Compliance	Lower Confidence Interval	Upper Confidence Interval
Moment 1	Before touching a patient	42	41	97.6%	87.4%	99.9%
Moment 2	Before clean/aseptic procedure	43	40	93.0%	80.9%	98.5%
Moment 3	After body fluid exposure risk	23	23	100.0%	85.2%	100.0%
Moment 4	After touching a patient	68	63	92.6%	83.7%	97.6%
Moment 5	After touching patient surroundings	34	27	79.4%	62.1%	91.3%



***DATA TO BE APPROVED.** HPSC is awaiting permission or HPSC may have just been granted permission by the named healthcare facility to publish the data appearing on this report.

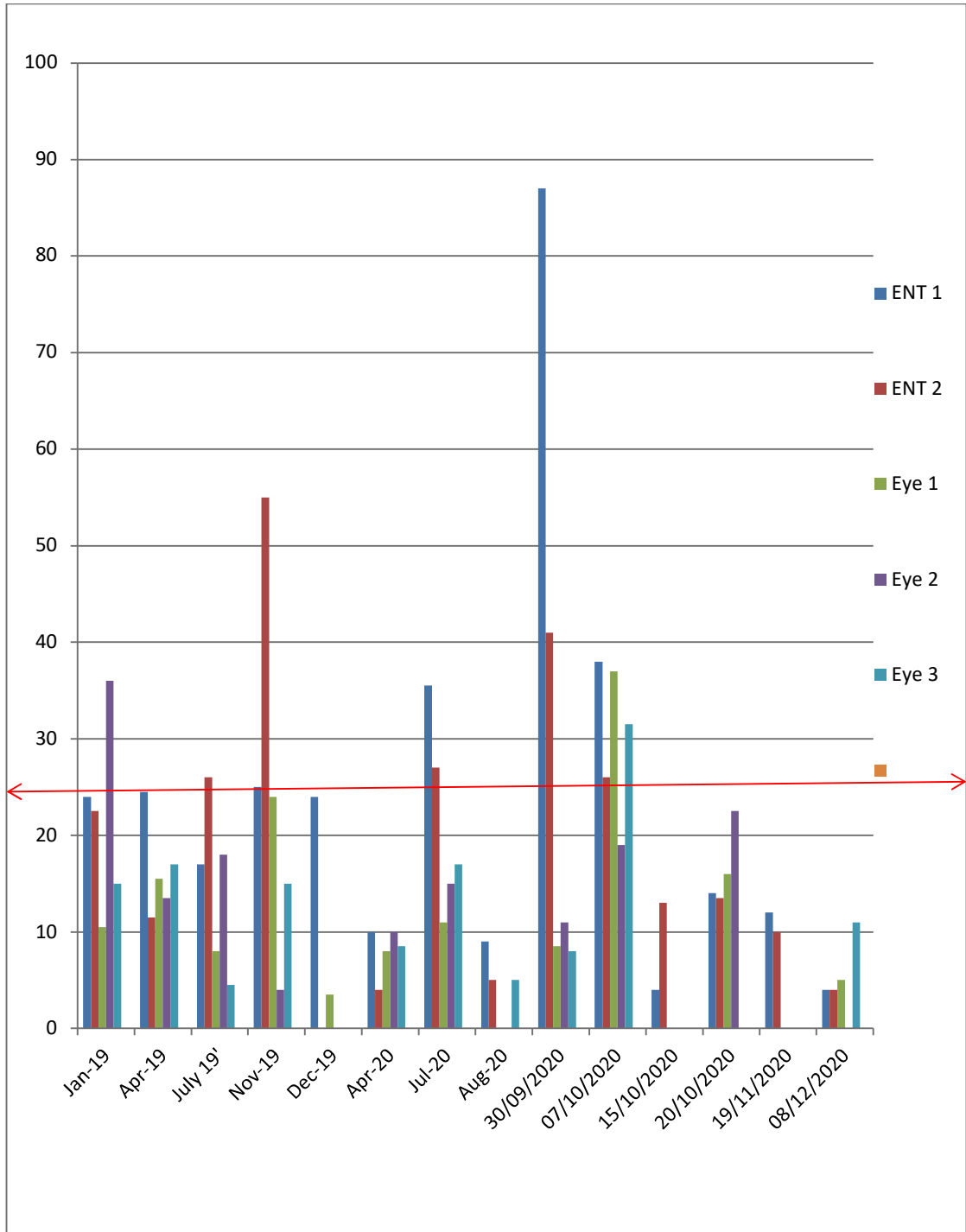
Environmental audits



Ward Compliance

Trend	Ward	Average Compliance
-	RV - MPR (minor procedure room)	94.5% (8)
↓	RV - ENT OPD	92.3% (32)
↓	RV - Childrens Ward	91.6% (6)
-	RV - HLW West Wing	91.5% (9)
↑	RV - ENT OT, EYE OT	89.6% (40)
↑	RV - Harvey Lewis Wing (HLW)	88.6% (30)
↑	RV - Day Care Unit	86.0% (27)
↑	RV - West Wing	84.9% (34)
↓	RV - A&E	84.7% (36)
↑	RV - Basement	82.2% (5)
↓	RV - X-ray	79.0% (11)
↓	RV - PACU (post anaesthetic care unit)	78.5% (11)
↓	RV - EYE OPD	75.4% (27)

Appendix 10 OT Bacterial Counts



Minor Procedure Room		toilets on cor x1	room 21 ensuite	kitchen x1		Clinic 6 x1												
waiting rm x1			room 26	Public toilets x 5		rm 7												
Procedure rm 1 x1			ensuite 26			rm 8												
Procedure rm 1 x1						Treatment rm beside check in area x1												
treatment room						new glaucoma clinic							56	63%				
						new fields clinic in basement							33	37%				
						Photographic clinic x1												
7	2	7	13	9	3	18	5	2	2	2	7	3	?	3				2
12	4	11	16	15	9	20	5	2	2	2	10	3	6	7				3

Appendix 12: Covid-19 After Action Review

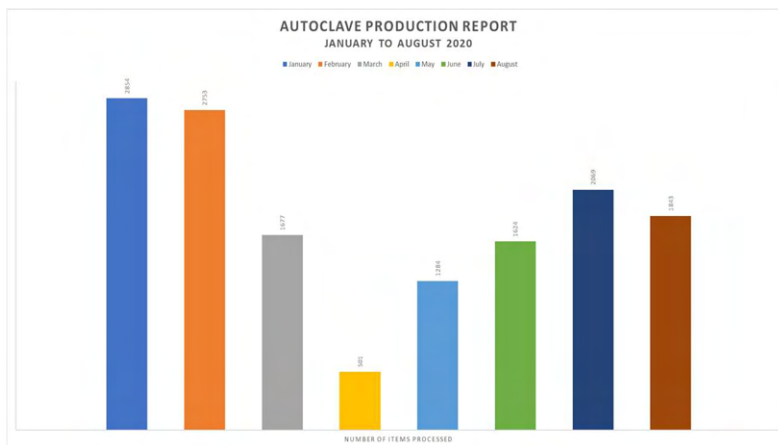
[Covid-19 After Action Review Report - 24.09.20 Final.docx](#)

Appendix 13

DECONTAMINATION INFECTION CONTROL REPORT

CDU production reports

Production reports for January 2020- August 2020

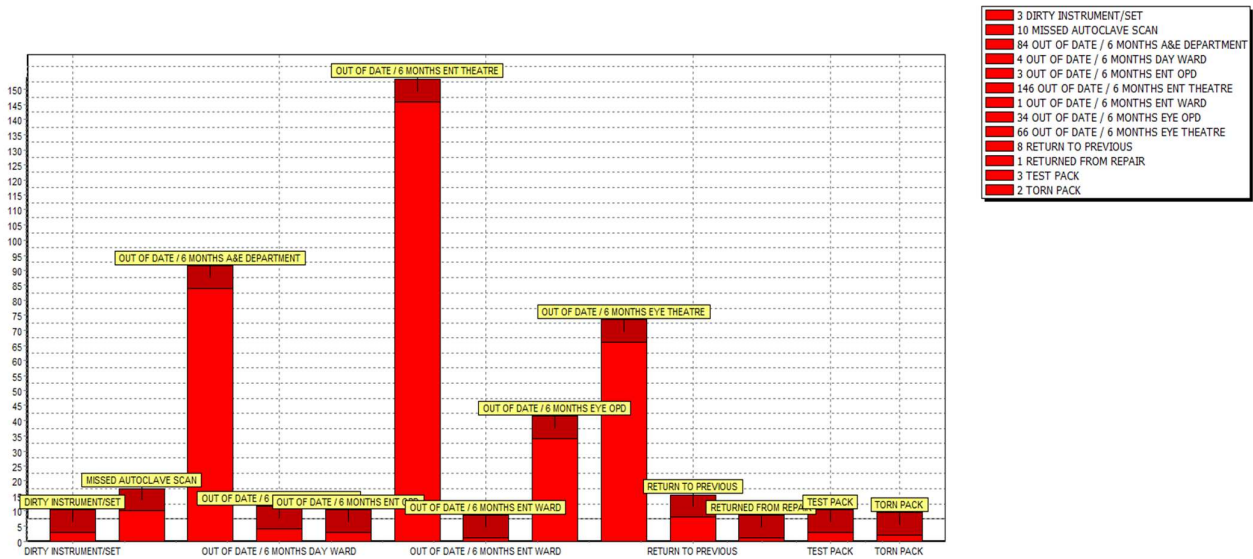


Months	Number of Items Processed
January	2854
February	2753
March	1677
April	501
May	1284
June	1624

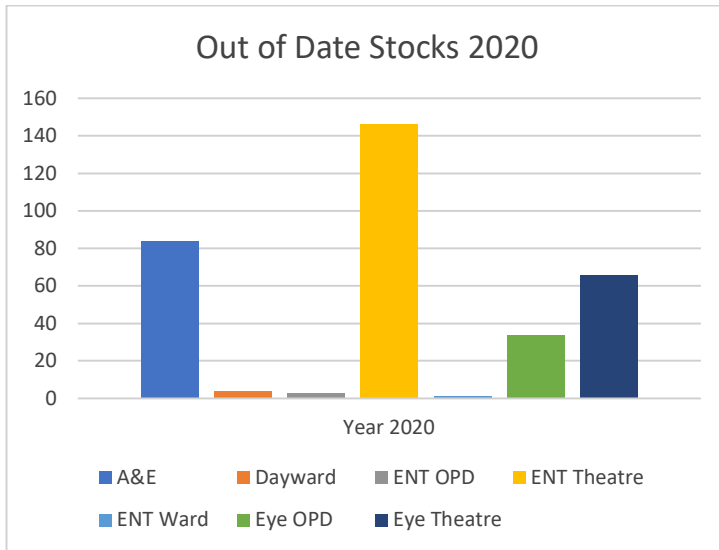
❖ Total number of production items for Jan -August 2020 is 14,605 reusable medical devices.

Non-Conformances For CDU

Total number of Non-Conformances for year 2020 for the CDU Department= 499.



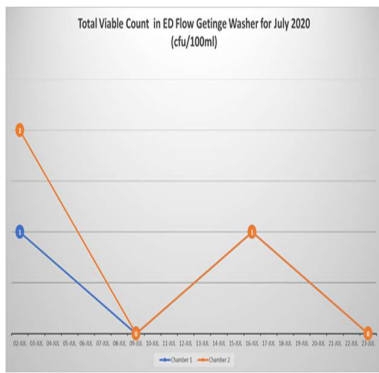
Out of Date stock



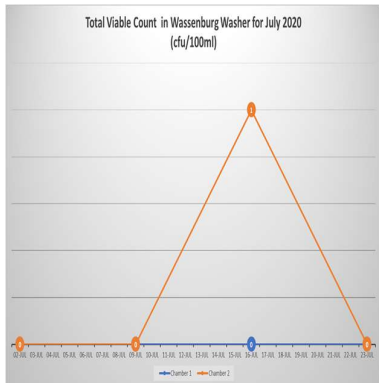
Location	Year 2020
A&E	84
Day ward	4
ENT OPD	3
ENT Theatre	146
ENT Ward	1
Eye OPD	34
Eye Theatre	66

Water testing in EDU

Weekly water testing of the scope washer continues in the Endoscopy unit on final rinse water. Total Viable Counts all with in HSE guidelines and recommended limits <10 CFU per 100ml. as per HSE Standards and Recommended Practices for Endoscope Reprocessing Units. Example of TVC counts from Wassenburg WD440 scope washer (July 2020)



Date	Chamber 1	Chamber 2
02-Jul	1	2
09-Jul	0	0
16-Jul	1	1
23-Jul	0	0



Date	Chamber 1	Chamber 2
02-Jul	0	0
09-Jul	0	0
16-Jul	0	1
23-Jul	0	0

Ventilation in CDU/EDU

There is no air handling system in either the CDU or EDU department. Both CDU/EDU have an air conditioning unit installed. There is a plan to install an additional air conditioning unit in the sterile storeroom in the CDU department during the refurbishment project. Currently temperatures and humidity in the CDU/EDU departments are monitored daily by staff and recorded manually.