

# Sharps injuries and bloodborne pathogen exposure among healthcare workers: a 5-year surveillance in a teaching hospital in Singapore

Zhang Zhimin, Jin Pinhong, Toh Hui Xian, Tan Soong Geck, Molly How Kue Bien, Tan Kwee Yuen, Sheena Ong Jin Min, Lee Lai Chee and Ling Moi Lin

Infection Prevention & Epidemiology, Singapore General Hospital

**Introduction:** Bloodborne pathogens' exposures are defined as injuries to contaminated sharps and exposures to patients' blood or body fluids continue to present risks to healthcare workers (HCWs). This study was conducted to investigate the epidemiological characteristics of sharps injuries and evaluate the effectiveness of prevention strategies in an Academic Medical Centre (AMC) in Singapore. **Method:** This retrospective study was conducted at a 1,700 bedded AMC. The data was retrieved from the hospital's electronic incident reporting system over a five-year period between 2019 and 2023 at Singapore General Hospital. **Results:** There are a total of 719 bloodborne pathogens' exposures incidents. The highest incidence of bloodborne pathogens' exposures was reported among doctors (3.5 incidents per 1000 healthcare workers per month), followed by nurses (1.4), allied health (0.4) and ancillary staff (0.3) during the 5- year period. Intraoperative procedures (IOP) 198 (27.5%) see the most frequent incidents followed by minor procedures 112(15.6%), splash incidents 91 (12.7%), blood taking 87(12.1%), IVIM (8.3%). The highest incidents among IOP were associated with use of suture needles. Approximately 2.9%, 2.3% and 0.7% of the source patients were carriers for Hepatitis B, Hepatitis C and HIV respectively. No seroconversion occurred among all injured HCWs. The overall sharps injury incidence has improved from 21.5 to 11.2 per 1000 healthcare workers per year following targeted preventive measures implementation. **Conclusion:** A comprehensive bloodborne pathogen exposures programme greatly helps to improve and mitigate the risk of exposures where key preventive measures are identified, followed by timely implementation of appropriate post-exposure management.

*Antimicrobial Stewardship & Healthcare Epidemiology* 2025;5(Suppl. S1):s11

doi:10.1017/ash.2025.105

# The impact of different pre-operative interventional hair- removal behaviours on biophysical characteristics and surgical site infection – a comparative analysis

Veena Kumari DrHB<sup>1</sup>, Ann Devapriya Ms.<sup>2</sup>, Mariamma Philip Dr.<sup>3</sup>, Muralidharan KDr.<sup>4</sup> and Shashank Devapur Vasant Dr.<sup>5</sup>

<sup>1</sup>Professor & ICO, Department of Neuromicrobiology NIMHANS, Bengaluru, India, <sup>2</sup>Sr. Nursing Officer & ICN, Hospital Infection Surveillance System (HISS), Dept of Neuromicrobiology NIMHANS, Bengaluru, India, <sup>3</sup>Addl. Professor, Dept of Biostatistics NIMHANS, Bengaluru, India, <sup>4</sup>Professor & Medical Supt, Dept of Psychiatry NIMHANS, Bengaluru, India and <sup>5</sup>Inflexon Academy (A unit of IHS LLP), Bengaluru, Karnataka, India

**Introduction:** Razors were being used for pre-operative hair removal in our Institute. As per international guidelines recommending the use of surgical clippers, we opted to study the effects of two pre-operative skin preparations in our Neurosurgical centre. **Objectives:** **Primary ; Pre auditing period** -Assess knowledge and skill in usage of Razor/Clipper as preoperative skin preparation methods, Provide **training** on Clipper method and assess the knowledge /awareness on merits and demerits of both methods, **To implement** the Clipper method as against Shaving **Secondary; Post auditing period** -Investigate the efficacy and safety of clippers versus razors, on variety of biophysical parameters and Surgical Site Infection

(SSI) **Methods :** PICO questions ; Population: Adult patients undergoing any type of surgical procedure, Intervention: Hair removal, Comparator: Different methods of Hair removal, Outcomes: Biophysical parameters and SSI •**Target population:** Sixty adult patients undergoing neurosurgical procedures. •**Subjects:** 30 each subjected to shaving and clipper methods •Pre and Post assessment of on **25 parameters** /sub-parameters •Analysis by MS-Excel and SPSS. **Results:** •**Preoperative** -Prior skin injuries and/or reactions; adequacy of hair removal •**Complete hair removal :** 30 (100%) in the clipper group versus 3 (10%) by shaving (**p = 0.0001**). •**30 mins after hair removal** ; significantly less skin issues in the clipper group •**Post operative** - Skin injuries in 20 (66.6%) of the razor and none in the clipper group. •**SSI** - Two (**6.6%**) in the razor and none in the clipper group. **Conclusions:** The assessment showed that shaving leads to partial hair removal increasing the scores for skin issues, significant association between preoperative skin injuries and SSI, implying inverse correlation with the clipper method. This study provides insights into significance of among other biophysical parameters underscoring adoption of clipper as the standard practice for preoperative hair removal, in our setting thus enhancing patient safety.

**Keywords:**Surgical Clipper; Razor; SSI; Pre-operative; Neurosurgery

*Antimicrobial Stewardship & Healthcare Epidemiology* 2025;5(Suppl. S1):s11

doi:10.1017/ash.2025.106

# Trend changing to the access category antibiotic usage after digital antimicrobial stewardship tool E-RASPRO 9 months implementation in an Indonesian hospital

Hadianti Adlani<sup>1,2</sup>, Aziza Ariyani<sup>2</sup>, Ronald Irwanto Natadidjaja<sup>1,2,3</sup> and Anti Dharmayanti<sup>1,2</sup>

<sup>1</sup>Indonesian Society of Infection Control (INASIC) Branch Banten, <sup>2</sup>RASPRO Indonesia Study Group and <sup>3</sup>Faculty of Medicine Universitas Trisakti

**Background:** Antimicrobial Stewardship Program (ASP) is a global issue. World Health Organization (WHO) stated, there are 3 categories of antimicrobial: ACCESS, WATCH, and RESERVE. e-RASPRO as a digital ASP may alter antibiotic prescribing pattern by prioritizing ACCESS category as suggested by WHO. **Methods:** This manuscript was a ward retrospective survey data of 9 months Define Daily Dose (DDD) average before-after implementing the electronic-RASPRO (e-RASPRO) on ACCESS & WATCH antibiotic. **Results:** Number of inpatients 9 months before-after e-RASPRO implementation were 7,754 and 6,794. Within 9 months after implementing e-RASPRO there was a trend of antibiotic prescription shifting from WATCH category antibiotic to ACCESS category antibiotic. There was a trend of reduced Define Daily Dose (DDD) average of WATCH category antibiotic. 24.82% of 3<sup>rd</sup> generation Cephalosporin, 33.20% of Quinolones, 14.76% of Carbapenems and 100% of Piperacillin Tazobactam DDD average were reduced. While, in ACCESS Category Antibiotic, there were an elevation of Penicillin and Aminoglycosides DDD average up to 528.66% and 137.66%. **Conclusion:** There are trend changing of DDD average from WATCH to ACCESS category antibiotic following the 9 months implementation of e-RASPRO. We need further study to judge the effectiveness of e-RASPRO as a digital ASP tools.

**Keywords:** digital antimicrobial stewardship; Define Daily Dose; ACCESS; WATCH

*Antimicrobial Stewardship & Healthcare Epidemiology* 2025;5(Suppl. S1):s11

doi:10.1017/ash.2025.107