**Antimicrobial Resistance
and Infection Control**

MEETING ABSTRACTS

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I01
Evaluating the acoustical performance of elastomeric half mask respirators, surgical masks, and single use N95 using measurements of speech test intelligibility

E. Rodgers[1,*] on behalf of David Larson, Graeme Fridlay, Heather Smart, Trevor Penner
[1]Precision Medical, Winnipeg, Canada
Correspondence: E. Rodgers
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Introduction: With the use of elastomeric-half mask respirators in healthcare settings, it has been reported that the verbal communication is decreased or compromised when wearing the masks (Palmiero, Symons, Morgan and Schaffer, 2016). This study examines the communication effectiveness of this innovation (elastomeric reusable respirator) and others in the industry, using speech intelligibility objective scoring, and qualitative research.
Objectives: This research measured the acoustical performance, speech transmission index (STI) (Palmeiro, et al., 2016) on an innovative elastomeric respirator, and others utilized in health care, according to IEC 60268-16 *Objective rating of speech intelligibility* standard.
Methods: STI measurements were obtained in a semi-anechoic acoustic test chamber/quiet room with background noise levels of less than 15 dBA. Then higher levels of background noise (57.6 dBA and 72 dBA, Zunn and Downey, 2005) was added to the test room and additional STI tests will be conducted in the presence of these elevated background noise levels.
The "voice" signal was emitted by the artificial voice of an acoustic head and torso simulator (HATS) and was one of two types of sound: the STI test waveform or the the Harvard sentences sound waveform (phonetically balanced and very clearly spoken human speech). The background noise portion, when used, was added separately by a high fidelity loudspeaker. The speech and STI waveform sounds were produced inside the test room at the sound level of 60 dBA (1 m microphone distance).

Results: In an environment with no background noise, the innovation of the re-usable elastomeric respirator, yielded the highest STI rating compared to other elastomeric respirators (0.90–0.91) or excellent rating. Other elastomeric respirators tested, showing fair, to low excellent range. The re-usable elastomeric respirator innovation had a 0.03 less in speech intelligibility than, single use N95 STI rating.
Conclusion: Speech intelligibility is complex, and incorporates subjective (listener) criteria, objective speech intelligibility, and background noise, as well as the environment. Additional subjective testing, with the recorded sound files, with a randomized control clinical trial would benefit this research.
Disclosure of Interest: E. Rodgers Consultant for: Precision Medical.

I02
Proximity, frequency and duration of close patient contacts among nurses in a COVID-19 intensive care unit: an electronic measurement

M. M. Neuwirth[1,*], T. Pommeranz[2], F. Mattner[1], R. Otchwemah[1]
[1]Institute for Hygiene, [2]Lung Clinic, Cologne Merheim Medical Centre, University Hospital Witten/Herdecke, Cologne, Germany
Correspondence: M. M. Neuwirth
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Introduction: SARS-CoV-2 is mainly transmitted via respiratory ingestion of virus-containing particles. In principle, the likelihood of exposure to infectious particles of any size is increased within a distance of 1–2 m to an infected person. Nurses are particularly at risk of contracting COVID-19 from patients due to the close patient contact and the number of intensive contacts.
Objectives: It has not yet been investigated, how long and often nurses are exposed to a close patient contact due to the intensive care during their service. The study aimed to determine the duration and frequency of close patient contacts between nurses and COVID-19 patients during nursing activities.
Methods: In the period from 14.12.2020 to 28.02.2021, 12 beds of a COVID-19 pulmonary intensive care unit were equipped with

Conclusion: The prescription of an antibiotic during pregnancy should take into account both the maternal prognosis and the safety for the fetus. Collaboration between gynecologists, microbiologists, infectilogists and pharmacologists is necessary in order to establish an updated antibitherapy protocol.
Disclosure of Interest: None declared.

P035
Antibiotic prescription assessment in public hospitals in Abidjan, Côte D'ivoire: a global point prevalence survey
I. A. D. Yapi[1,*], A. A. Kacou[2], A. Versporten[3], I. pauwel[4], Y. M. coulibaly-diallo[1], G. A. J. bahan[1], A. kacou n'douba[5]
[1]biology, [2]pharmacy, chu angre, abidjan, Côte d'Ivoire, [3]microbiology, vaccine and infectious diseasesinstitute, [4]microbiology, vaccine and infectious diseases institute, antwerpen, Belgium, [5]microbiology, chu angre, abidjan, Côte d'Ivoire
Correspondence: I. A. D. Yapi
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Introduction: Antimicrobial resistance is an emerging global challenge. It is correlated with the consumption of antibiotics. Inappropriate use of antibiotics has been fuelled by lack of surveillance and diagnostic capabilities and lack of treatment guidelines. The government of Côte d'Ivoire in 2019 launched the national action plan on antimicrobial resistance.
Objectives: Our objective was to describe the prescription patterns of antibiotics among hospitalised patients.
Methods: The standardized Global Point Prevalence Survey (Global PPS) method assessed antimicrobial prescribing in 11 hospitals in Abidjan, including 7 secondary level hospitals and 4 tertiary level hospitals from August to December 2020. Data on antimicrobial agents and their indications have been collected.
Results: Out of 740 inpatients, 511 (69%) received an antimicrobial treatment and 491 (66,35%) antimicrobial prescription being antibiotics. This prevalence was respectively 64.49% and 74.56% for tertiary and secondary level hospitals. Therapeutic prescribing accounted for 44% (tertiary level) and 43% (secondary level). For global prophylaxis, it was 52% (tertiary level) and 54% (secondary level). The main antibiotics used in tertiary and secondary level hospitals were ceftriaxone (27% vs 44%), metronidazole (13% vs 24%) and amoxicillin (12% vs 15%). In both therapeutic and prophylaxis, ceftriaxone (54%) was used the most in any hospital. In tertiary hospitals; central nervous system and lower respiratory infections were the most common indications. Sepsis predominated in secondary hospitals. Globally, the duration of prophylaxis was 36,40% for single dose, 37,71% for one day, and 25.87% for more than one day.
Conclusion: Antimicrobial prescription mainly antibiotics is high in Côte d'Ivoire. This situation may be improve by stewardship activities.
Key words: Prescription, Antibiotics, Point Prevalence Survey, Hospital, Abidjan.
Disclosure of Interest: None declared.

P036
Impact of weekly clinical audits and feedback on consumption of protected anti-gram negative antibiotics in 8 hospitals of the French-speaking part of Switzerland
E. Moulin[1,*], C. Plüss Suard[2] on behalf of contributed equally as submitting author, C. Bellini[3], L. Christin[4], C. Chuard[5], O. Clerc[6], A. Cometta[7], V. Erard[5], O. Marchetti[8], N. Troillet[3], C. Voide[3], G. Zanetti[9], L. Senn[1].
[1]Centre Hospitalier Universitaire Vaudois, Lausanne, [2]Institute for Infectious Diseases, University of Bern, Swiss Centre for Antibiotic Resistance (ANRESIS), Berne, [3]Institut Central des Hôpitaux, Sion, [4]Groupement Hospitalier de l'Ouest lémanique, Nyon, [5]Hôpital de Fribourg, Fribourg, [6]Hôpital de Pourtalès, Neuchâtel, [7]Etablissement hospitalier du nord vaudois, Yverdon-les-Bains, [8]Etablissement Hospitalier de la Côte, Morges, [9]Université de Lausanne, Lausanne, Switzerland
Correspondence: E. Moulin
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Introduction: Multiple antibiotic stewardship proactive interventions have been shown to improve antibacterials prescribing practices in hospitals. Nevertheless such interventions are so far limited in Switzerland.
Objectives: to evaluate the impact of weekly clinical audits conducted by an external infectious diseases specialist and an internal senior physician and multifaceted feedback strategies on reducing the use of protected anti-Gram negative antibiotics, including fluoroquinolones (FQ), 3rd and 4th generation cephalosporins (G3C, G4C), piperacillin-tazobactam (P/T) and carbapenems.
Methods: The study included internal medicine, general surgery and intensive care wards of 8 Swiss acute care hospitals. Wards were allocated to either intervention for 6 months (n = 14) or a control group (n = 10). Linear regression models of an interrupted time series was performed to assess the impact of the intervention on the monthly use of protected antibiotics.
Results: During the intervention, 9715 in-patients were screened, of whom 1684 (17.3%) received a "targeted antibiotic". The auditing team proposed a modification of the antibiotic therapy in 24% of patients, mainly stops, followed by de-escalation and switch to oral route. The rate of inappropriateness varied from 8% in ICU to 32% in surgical wards, and from 15% for carbapenems to 38% for FQ. We observed a statistically significant decrease use of FQ, G4C and P/T in 5, 3 and 2 intervention wards, respectively, and a significant decrease in the use of 2 antibiotics in 2 wards.The use of G3C and carbapenems showed no significant change.
Conclusion: Our pragmatic multicenter study showed a statistically significant impact on consumption of FQ, GC4 and P/T in 8/14 intervention units. It allowed a better overview of the appropriateness of antimicrobial prescriptions. Our study offered the opportunity to raise awareness about antibacterial resistances and encourage best daily practices among prescribers.
Disclosure of Interest: None declared.

P037
Organ dysfunction markers may predict aminoglycoside pharmacokinetics in critically ill patients with abdominal sepsis
B. Shahrami[1,*], A. Sefidani Forough[2], F. Najmeddin[1], A. A. Arabzadeh[3], M. Mojtahedzadeh[1]
[1]Department of Clinical Pharmacy, Tehran University of Medical Sciences, Tehran, Iran, Islamic Republic Of, [2]Department of Clinical Pharmacy, Queensland University of Technology, Brisbane, Australia, [3]Department of Surgery, Ardabil University of Medical Sciences, Ardabil, Iran, Islamic Republic Of
Correspondence: B. Shahrami
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Introduction: Pathophysiological changes and organ dysfunction following sepsis alter antibiotic pharmacokinetics. In the absence of pharmacokinetic data at the time of empirical treatment initiation, available biomarkers could play an important role in predicting the pharmacokinetic parameters.
Objectives: This study aimed to evaluate the relationship between the amikacin pharmacokinetics and the biomarkers associated with organ dysfunction in critically ill patients with intra-abdominal sepsis.
Methods: A case series involving critically ill patients with intra-abdominal sepsis who received an amikacin loading dose of 20–25 mg/kg intravenous infusion, was studied. The 1-, 2-, 4-, and 6-h amikacin serum concentrations were measured to calculate the pharmacokinetic parameters. The available biomarkers associated with organ dysfunction were recorded. A linear regression analysis was performed to examine the relationship between the amikacin pharmacokinetics and the biological parameters.
Results: Twenty-one patients were studied. A significant correlation was found between the volume of distribution and ESR ($p < 0.05$, $r = 0.844$). Moreover, drug clearance had a significant inverse correlation with serum lactate ($p < 0.05$, $r = -0.603$). No other significant correlations were found.
Conclusion: ESR and serum lactate were identified as useful predictors of amikacin pharmacokinetics in critically ill patients with intra-abdominal sepsis and may help guide the selection of appropriate

empirical dosing. Further studies are required to confirm these findings.
Disclosure of Interest: None declared.

Poster Session: Nosocomial Candida infections

P038
An outbreak of candida parapsilosis bloodstream infections in pediatric oncohemathology unit

R. Vatcheva-Dobrevska[1,*], P. Stefanova[1], V. Dicheva[1], I. Philipova[2], T. Kantardjiev[3]
[1]Microbiology, University Hospital "Queen Joanna" Sofia, [2]National Reference Lab Fungal and STI, [3]Director, National Center Infectiouse and Parasitic Diseases, Sofia, Bulgaria
Correspondence: R. Vatcheva-Dobrevska
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Introduction: The *Candida spp* is one of the most common causes of bloodstream infections (BSI) in immunocompromised hosts. Their ability of biofilm formation on different implants facilitate the catheter-associated infections.
Objectives: The aim of this study is to investigate an outbreak of bloodstream infections in pediatric hematology-oncology patients with totally implantable venous access port systems.
Methods: A total of 36 episodes of port system-related bloodstream infections were registered and investigated in 11 patients between January and May, 2021. Blood cultures, needles, saline solutions, i.v. plastic lines,bags, staff hands samples sent to microbiology lab. The *Candida spp*. isolation on SDA. The isolates identification by VITEK 2, BioMerieux and api20CAUX, BioMerieux, France. Re-identified by MALDI-TOF (MALDI-Biotyper, Bruker. Whole genome sequencing was prepared in the National Reference Lab.
Results: The data from patients notes shows that all patients were neutropenic and with fever at the time of blood cultures and candidemia diagnosis Six of all patient had one sepsis episode each. Five of them had three or four sepsis episodes, mostly in March and May, 2021. The all blood cultures isolates as well as needles' isolates were identified as *Candida parapsilosis*. In the cases of five patients with persistent candidemia and ongoing fever, additionally to antifungal therapy, the ports were removed, based on the international guidelines and manufacturer's instructions. Various gaps in the Infection Prevention and control practices were found: poor hand hygiene compliance, shortage of staff and incidents of using a common saline solution bottle etc.
Conclusion: The totally implantable port systems represent a high risk of bloodstream infections complications in pediatric onco-hematology patients. The healthcare workers hands can be a risk factor for contamination with Candida parapsilosis. Further work need to create a special bundle and develop strategic measures for infection prevention and control of infections in case of totally implantable venous access port systems as well as a medical staff training programme.
Disclosure of Interest: None declared.

P039
Infection control in two COVID-19 patients with evidence for Candida Auris, Germany

M. Wiese-Posselt[1,*], C. Hinrichs[2], B. Weikert[1], B. Graf[3], P. Enghard[2], R. Körner[2], A. Schrauder[3], A. Knaust[3], C. Geffers[1], O. Kurzai[4,5], K.-U. Eckardt[2], P. Gastmeier[1].
[1]Institute of Hygiene and Environmental Medicine, [2]Department of Nephrology and Medical Intensive Care, Charité – Universitätsmedizin Berlin corporate member of Freie Universität Berlin, Humboldt-Universität zu Berlin, [3]Labor Berlin – Charité Vivantes GmbH, Berlin, Berlin, [4]University of Würzburg, Institute of Hygiene and Microbiology, Würzburg, [5]National Reference Center for Invasive Fungal Infections NRZMyk, Leibniz Institut für Naturstoff-Forschung und Infektionsbiologie – Hans-Knöll-Institut, Jena, Germany.
Correspondence: M. Wiese-Posselt
Antimicrobial Resistance & Infection Control **10**(1): P039

Introduction: *Candida auris* is an emerging pathogen in hospital infections that can present multi-resistance to antifungals and causes outbreaks.
Objectives: The aim is to describe the infection prevention and control for *C. auris*.
Methods: Identification of yeast isolates was performed by MALDI-TOF and confirmed by ITS sequencing. Infection control measures were decided by a multi-disciplinary ad hoc outbreak panel. Patient screening once or twice a week and extensive environmental testing for *C. auris* was conducted.
Results: *C. auris* was isolated from a urine sample of a COVID-19 patient who had been transferred from an Egyptian hospital to our COVID-19 intensive care unit (ICU). Immediately, disinfection routine was changed, because *C. auris* is insensitive to quaternary ammonium compounds. The patient had already been isolated from admission due to evidence of 4MRGN *Klebsiella pneumoniae*. Six days after confirmation of *C. auris* in the index patient, a second COVID-19 patient was identified with *C. auris*. Both patients were isolated in a separated area of the ICU. Strict hygiene and infection control measures were implemented promptly. In the nine weeks from initial confirmation of *C. auris* and discharge of the two affected patients, *C. auris* was repeatedly identified in clinical samples of them. However, it was not detected in any other patient on the ICU (n = 7) or discharged from it (n = 13) nor in any environmental sample (n = 129). The two *C. auris* patients had been intubated using the same video laryngoscope seven days apart. Although the equipment and the spatulas had been manually reprocessed using chlorine dioxide-soaked wipes they might serve as transmission vehicle. Therefore, it was recommended to use disposable spatulas.
Conclusion: A rapid confirmation of a *C. auris* in the lab and the immediate implementation of adequate hygiene measures at the ward are crucial in order to prevent transmission of *C. auris* to other patients.
Disclosure of Interest: None declared.

P040
Prospective evaluation of Candida colonization index in intensive care unit patients, in Tunisia

M. Ben Brahim[1,*], N. Haddad[2], S. Boughattas[1], A. Farah[1], L. Tilouche[1], W. Naija[3], H. Hmouda[4], A. Trabelsi[1], S. Ketata[1]
[1]Laboratory of microbiology, University Hospital Sahloul, [2]Department of preventive and community medicine, Faculty of Medicine of Sousse, [3]: Surgical intensive care unit, [4]Medical intensive care unit, University Hospital Sahloul, Sousse, Tunisia
Correspondence: M. Ben Brahim
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Introduction: Multiple-site colonization with *Candida spp.* is commonly recognized as a risk factor for Invasive Candidiasis (IC) among intensive care unit (ICU) patients. Up to 80% of those patients are colonized one week after their admission.
Objectives: Therefore, this study was carried out to assess the relationship between IC and the determination of *Candida* colonization index (CI) in patients addmitted to an ICU.
Methods: A prospective observational study was conducted in 2020 during two months in three intensive care units (ICUs) of the university hospital Sahloul in Sousse, Tunisia.
All patients admitted at least for one week in the ICU were included in the study.
After 7 days from the admission in the ICU and every week, five of the following samples were collected for mycological screening: tracheal secretions, rectal swab, armpit skin swab, mouth swab, nasal swab and urine. According to Pittet's definitions, the *Candida* colonization index (CI) was calculated as the proportion of the number of distinct body sites (other than blood culture) colonized with *Candida spp.* over the total number of sites cultured. Patients with CI $\geq$ 0.5 were considered heavily colonized.
Results: Out of 46 studied patients, a total of 21 patients have had an IC based on both biological and clinical evidences. Using a CI $\geq$ 0.5, the sensitivity was the highest at the third week from the admission (84,6%) and the positive predictive value (PPV) was excellent from the second week