ABSTRACTS

17TH CONGRESS OF INTERNATIONAL FEDERATION OF INFECTION CONTROL

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ORAL PRESENTATION

[45]
The impact of healthcare-associated infections after patients' discharge: a matched-cohort study

EMÍLIA CAROLINA OLIVEIRA DE SOUZA; SEBASTIÃO PIRES FERREIRA FILHO; KASYS MEIRA GERVATAUSKAS; MATHEUS RAGAZZO LEME; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO (UNESP), BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Previous studies with retrospective design documented high rates of readmission of patients discharged after treating a Healthcare-Associated Infection (HCAI). The objective of our study was to investigate prospectively the medical and social impact of HCAIs on patients discharged from a tertiary-care hospital in inner São Paulo State, Brazil.METHODS: We present preliminary results of a matched-cohort study that included patients discharged from the teaching hospital of Botucatu School of Medicine (450 beds). We enrolled 26 subjects who had HCAI, alongside with 48 controls. Subjects were followed with weekly telephone calls for up to 24 weeks. We addressed the need for medical consultations, the number of medications prescribed, the dependency on family caregivers, hospital readmissions, and the time taken to return to work or to usual activities. Univariate statistical tests included Chi-square and Mann-Whitney tests, when appropriate. Multivariable Cox regression models for readmission and return to work/usual activities were adjusted for age, gender and the Charlson comorbidity index.RESULTS: Overall, 38.5% of HCAI cases and 16.7% controls were readmitted during follow-up ($p<0.001$). The adjusted Hazard Ratio (aHR) for readmission of HCAI cases was 12.26 (95% Confidence Interval [CI], 2.65-56.81). Cases also took longer to return to work or usual activities (median 20 versus 4 weeks, $p<0.001$; aHR=0.29, 95%CI=0.16-0.51), had greater number of medications prescribed at discharge (median 5 versus 3.5, $p=0.002$) and medical consultations during follow-up (median 4.5 versus 2, $p=0.007$). Finally, 19.2% of HCAI subjects (versus none of the controls) had a family member who quitted job in order be a caregiver ($p=0.004$). CONCLUSIONS: HCAIs continue to impact on health conditions, autonomy and family dynamics after patients' discharge.

[85]
Ventilator-associated event - VAE might not detect traditional VAP

MARIA CLAUDIA STOCKLER ALMEIDA; FABIANA AGENA; CATERINE SELY OLIVEIRA; LUIS MARCELO MALBOUISSON

HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO (USP), SÃO PAULO, BRAZIL.

Objective: To determine the incidence of the ventilator-associated events (VAEs) and its relation to days to extubation, days to ICU discharge, days to hospital discharge and mortality rate. And to compare VAEs findings to traditional ventilator-associated pneumonia (VAP). Methods: This study was conducted in a postoperative ICU at a tertiary teaching hospital - São Paulo – Brazil. We prospectively collected the novel VAE (VAE Calculator Ver. 3.0) and radiographic, clinical and laboratory data to confirm traditional VAP, between August 2014 and August 2015. Results: 138 patients, > 18 years, with MV longer than 2 calendar days were included, which corresponded to 151 episodes of MV. We found 4 (2.6%) VAEs (1.99 per 1,000 VD), 2 (1.3%) infection-related ventilator-associated complications (IVACs) (0.98 per 1,000 VD) and 13 (8.6%) traditional VAPs (6.37 per 1,000 VD). Both VAEs and VAPs had the modified CPIS > 6. The mean SAPS III was 59.5 (SD + 13.2) and the expected mortality rate 47.0% (17.6 – 72.2). VAEs compared to non-VAEs were not associated to days to ICU discharge (16 d; IQR 8-36.5 vs 10 d; IQR 6-20; p=0.29), hospital discharge (22 d; IQR 8-39 vs 15 d; IQR 7-31; p=0.75) or death (3% vs 88%; p=0.48), but were associated with days to extubation (14d; IQR 8 – 20 vs 5 d; IQR 3-12; p=0.03). VAPs compered to non VAPs were not associated to days to ICU discharge (16 d; IQR 11-23 vs 10 d; IQR 6-19; p=0.29) or death (5% vs 86%; p=0.22), but they were associated with days to extubation (12 d; IQR 7 – 18 vs 5 d; IQR 3-11; p=0.01) and hospital discharge (37 d; IQR 11-52 vs 15 d; IQR 7-30; p=0.04). Conclusions: VAE surveillance is less time-consuming and objective. VAP surveillance is less accurate and prone to bias. They detect different subset of patients. Larger studies are needed to define VAE as a marker of ICU quality on MV patients, as a marker of prevention practices of adverse events on MV patients and its metrics for benchmarking in our setting.

[90]
Risk factors for community MRSA colonization in patients admitted to a hospital in Rio de Janeiro

MARCOS PINHEIRO[1]; FERNANDA SAMPAIO CAVALCANTE[2]; DENNIS CARVALHO FERREIRA[3]; ANA CAROLINA FONSECA GUIMARÃES[4]; KATIA REGINA NETTO SANTOS[4]; SIMONE ARANHA NOUER[1]

1.HOSPITAL UNIVERSITÁRIO CLEMENTINO FRAGA FILHO, UNIVERSIDADE FEDERAL DO RIO DE JANEIRO; 2. CAMPUS MACAÉ, UNIVERSIDADE FEDERAL DO RIO DE JANEIRO; 3. UNIVERSIDADE VEIGA DE ALMEIDA; 4. INSTITUTO DE MICROBIOLOGIA PAULO DE GOES, RIO DE JANEIRO, BRAZIL.

The rise of community-acquired methicillin-resistant Staphylococcus aureus (CA-MRSA), resulting in an increased incidence and severity of staphylococcal infections, has reinforced the interest of its epidemiology. One of the prevention strategies recommended is the surveillance cultures at hospital admission for colonized patients. However, when they are expensive, they require substantial resources not including the public hospital network. It was conducted a cross-sectional study to determine the prevalence of MRSA in admitted and case-control patients to identify risk factors for colonization of MRSA. Patients with up to 72 hours of admission, collected nasal swabs cultures and test to identify resistance to methicillin. Staphylococcal Chromosome Cassette mec (SCCmec) genotypic tests were performed in the isolates and characterized by pulsed field gel electrophoresis (PFGE). Among the total of 702 patients which had collected sample, 180 (25.6%) isolated S. aureus, 21 (11.7%) identified as MRSA and 159 (88.3%) as MSSA. The risk factors for MRSA colonization were: antibiotic used in the last 03 days (OR 0.20, CI 95% 0.45-1.03), bed linen (OR 0.34, 95% CI 0, 10-1,03), shared towels (OR 6.01 CI 95%, 1.90-21.44), collective sports practice (OR 0.14, CI 95%, 0.02-1.06), (OR 0.20 CI 95%, 0.44-1.02) and hospitalization for more than r 3 days in the last year (OR 0.07 CI 95%, 0.01-0.26). The typing of the 21 samples identified as MRSA revealed that 15 (71.4%) samples had SCCmec IV, three (14.3%) had SCCmec II, two (9.5%) had SCCmec III and one (4,8%) had a non-typable cassette. PFGE in 20 of 21 MRSA samples revealed 12 different genotypic profiles. The knowledge of epidemiology supported by the results of this study on MRSA may potentiate treatment strategies, hospital and community control surveillance.

[177]
Impact of multimodal strategies in reducing healthcare associated infections (HAI)

MARCIA MARIA BARALDI[1]; CRISTIANE SCHMITT[1]; LIGIA MARIA ABRAAO[1]; AMANDA LUIZ PIRES MACIEL[2]; LUCIANA GOUVEA A. SOUZA[1]; PAULA ALMEIDA[1]; EDUARDO CAMACHO[1]; ÍCARO BOSZCZOWSKI[1]

1.OSWALDO CRUZ GERMAN HOSPITAL; 2. SCHOOL OF NURSING, UNIVERSITY OF SÃO PAULO, BRAZIL.

introduction: implementing multimodal strategies (MS) represents a substantial action that might help reducing rates of HAI. objective: to highlight the impact of MS to increase the hand hygiene (HH) adhesion rate and the prevention of bloodstream infection incidence (BSI). method: prospective study conducted between april 2013 and may 2016 in a tertiary hospital in the city of São Paulo. interventions were applied in the context1 - HH and context 2 BSI. change of system / structure: context 1 - dispensers at point of care, good quality product. Context 2 - alcoholic swab, CHG dressing, catheter insertion kits, sterile dressing for peripheral catheter. training and education: context1 - admission training, referral unit, periodic meetings and audits to improve best quality and patients perceptions. context 2 simulated jury, annual campaign, process audit, training with realistic simulation, insertion of new professionals in the care model. evaluation and feedback: context 1 - the rate of adhesion of HH to the ICU and the consumption of the alcoholic product are monitored. context 2 - audit and feedback of CVC care, preparation and administration of medications and BSI rates. discussion of the results with the multiprofessional team. reminders in the workplace: context1 - totems, advertisement with technique and 5 moments, stickers on elevators, use of the internal television channel, educational reports for patients. context 2 - advertisement in the area of preparation of medication, internal tools of dissemination newspaper integration. safety culture – context 1 and 2 - inclusion rates debate in meetings with senior management, association of outcomes with the Variable Compensation Program. annual administrative sponsoring of the campaigns, institutional marketing. results: the HH adhesion rate increased from 41 to 81% and the BSI reduced from 4.4/1000 CVC-day to 1.4 during this period. conclusion: MS are effective in achieving good outcomes in HAIs prevention.

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Antimicrobial stewardship: improvement science in action in an oncology unit.

GLAUCIA FERNANDA VARKULJA[1]; ANTONIO CAVALEIRO DE MACEDO LIMA FILHO[1]; VINICIUS CEZAR DA SILVA MOREIRA[1]; ERICA FERNANDA MANCILIA[1]; SIMONE ISIDORO PRADO[1]; CRISTIANE OLIVEIRA AZZALIN NAVAS[1]; CAMILA LAJOLO[2]; CAMILA SARDENBERG[2]; ADEMIR JOSE PETENATE[3]; PAULO BOREM[3]

1.HOSPITAL SANTA CATARINA; 2. ASSOCIAÇÃO CONGREGAÇÃO DE SANTA CATARINA; 3. INSTITUTE FOR HEALTHCARE IMPROVEMENT, SÃO PAULO, BRAZIL.

Introduction. Antimicrobial therapy based on scientific evidence significantly affects relevant outcomes for individual patients (mortality, length of hospital stay, and exposure to adverse events). An antimicrobial stewardship program should reduce the delay of drug administration, reduce unnecessary adverse events and the development of bacterial resistance. Preventing such consequences results in cost savings for providers, healthcare providers and patients. The aim of this project was to ensure an evidence-based antimicrobial rational use bundle for more than 90% of patients admitted to a 30-bed oncology unit. Interventions. Between June 2015 and March 2016, a multidisciplinary team from Hospital Santa Catarina was trained in Institute for healthcare improvement methodology. Over this period, patients admitted to the oncology unit who received antimicrobial were analysed to confirm adherence to drivers: timely administration of the first dose (within 1 hour of prescription); clinical specimen collections to microbiological tests prior to initiation of antimicrobials; and implementation of time-out (reassessment) after checking cultures results and clinical and laboratory evolution. Results. Median time of the administration of the first dose was reduced from 150 to 40 minutes. Time-out took place in 35% at the beginning of the project and in 80% in the last month. Cultures were obtained in almost 100% prior to the medication beginning but it got better over the study. Adherence to the proposed bundle was not achieved. Conclusion. Implemented changes had reduced the bottlenecks for timely administration. In spite of this fact the primary goal was not achieved. Considerations about the institutional culture in force may support proper planning in order to optimize efforts and organize actions. The improvement science methodology seems to be an interesting tool to be used with the purpose of reducing damages and increasing patient safety.

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The impact of group b *Streptococcus* protocol for the prevention of neonatal early onset sepsis

GISELY PEREIRA VETUCHE; CAMILA ALMEIDA SILVA; LIVIO DIAS; CHAYENNE MATSSUMOTO; MARIANA TOBARA; MICHELE NASCIMENTO; ROSANA RICHTMANN

MATERNIDADE SANTA JOANA, SÃO PAULO, BRAZIL.

Introduction: Group B Streptococcus (GBS) (S. agalactiae) is the main etiologic agent of neonatal early onset sepsis (EOS). It is estimated that GBS colonizes pregnant women in about 20% and babies in 50%; 1-2% of the colonized babies develop neonatal infection and mortality related to GBS is higher than 50%. Maternal transmission can be prevented through colonization screening and intrapartum antibiotic prophylaxis (IAP). Since 1996, the Center for Disease Control (CDC) suggests the investigation of colonization in pregnant women, IAP aplication and preventive measures for no transmission to the newborn. Objective: To describe the impact on the reduction of early onset neonatal sepsis and lethality by GBS after the implementation in 2000 of a Prevention Protocol, aiming to guarantee the screening of GBSprophylaxis according to CDC. Methods: A prospective study was carried out at the Pro Matre Paulista Maternity with 260 beds, and mean of 13,000 live births / year, 63 neonatal ICU beds with, mean admission of 1200 NB/ year, which evaluated the density of EOS by GBS after 1 decade of protocol implantation. Results: During the re-implantation of protocol the incidence of EOS was 0.39 / 1000 LB, with lethality of 60% and pregnant women colonization of 13%. In the last 5 years the incidence of EOS was 0.04 / 1000 LB, Lethality rate was 33% and colonization with 28% positivity average. Conclusion: The implementation of a protocol ensured improvement in the process of sepsis prevention by GBS. The rates of maternal colonization by GBS (and therefore, the risk of early-onset GBS disease) have been increasing. The data show the need to maintain this active management protocol , this practice has made possible the identification of deviations and interventions for improvements. They niversal screening and IAP continue to be the pillars for prevention.

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A statewide antimicrobial use surveillance: different outcomes for different health administration systems

FILIPE PIASTRELLI[1]; ICARO BOSZCZOWSKI[2]; GERALDINE MADALOSSO[3]; MARISTELA P. FREIRE[4]; DENISE BRANDÃO[3]

1.HOSPITAL ALEMÃO OSWALDO CRUZ; HOSPITAL ESTADUAL DE SAPOPEMBA; 2. HOSPITAL ALEMÃO OSWALDO CRUZ; 3.SAO PAULO STATE HEALTH DEPARTMENT; 4. HOSPITAL DAS CLÍNICAS UNIVERSITY OF SAO PAULO, BRAZIL

Introduction: Antibiotic use surveillance systems are important to determine and improve antimicrobial prescription in the era of multidrug resistant organisms (MDRO). This study describes a statewide antibiotic use surveillance system in São Paulo state, Brazil. Methods: Antimicrobial use and incidence of MDRO in bloodstream infections are reported monthly by intensive care units to Sao Paulo State Health Department. Antibiotics were grouped by class and expressed in defined daily doses (DDD) per 100 patient-days (pd), from 2009 to 2013. MDRO were classified as gram negatives resistant to 3rd generation cephalosporins, carbapenems, and gram positives resistant to vancomycin and oxacillin and compared to carbapenems, polymyxins, oxazolidinone and glycopeptides use, respectively. Hospitals were grouped according to administrative nature in private, philanthropic and public. Correlation between MDRO incidence and antibiotic use was investigated.Results: Cephalosporins were the most prescribed drugs, mean of 10,8 DDD/100pd although there was a decreasing trend in the period (10,1 to 6,6 DDD/100pd). The increase in the consumption of polymyxins and linezolid was the most expressive, consistent with the increase in the proportion of carbapenem-resistant Enterobacteriacea (CRE) and vancomycin-resistant Enterococci (VRE), respectively. Philanthropic hospitals consumed less than the other two administrative types in all antimicrobial groups. The highest consumption of the glycopeptide, carbapenem and polymyxin classes occurred in public hospitals. Conclusion: We described a significant increase in polymyxin and linezolide use, consistent with the global spread of CRE and VRE. We observed a discrepancy between the incidence of MDRO and broad-spectrum antibiotics use in different administrative regimens.

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Knowledge and obstacles in prevention of bloodborne infections among first responders in northern Thailand

AKEAU UNAHALEKHAKA

FACULTY OF NURSING, CHIANG MAI UNIVERSITY

Background: First responders (FRs) are at high risk of acquiring bloodborne infections. This cross-sectional survey aimed to determine knowledge and obstacles of FRs in prevention of bloodborne infections including accidents from blood contact at work. Methods: The samples were 188 FRs randomly selected from FRs working in 8 provinces in northern region of Thailand. Data were collected during January to February 2014 using self-administered questionnaire consisted of general information of FRs, knowledge, obstacles and support needed in prevention of bloodborne infection and blood contact at work. Results: The response rate was 84.5%. The results revealed that less than 50% of FRs had correct knowledge on risk of acquiring HIV infections at work, cleaning and disinfecting blood and body fluid contaminated area, managing used needles, practicing when contact with blood/ body fluids or had accident from needlestick or sharp injury and hand hygiene. Fifteen percent used to have accidents at work during the last one year. Forty eight percent of the accidents were blood/body fluid contact, 27.6% contact with blood owing to tear gloves, 13.8% had cut by glass ampoules and needlestick injuries. Their common obstacles were lack of personal protective equipment (PPE, 60.1%), insufficient manpower (50.5%), insufficient budget for medical and rescue equipment (48.4% and 46.8%) and malfunction of communication equipment (41.5%). Eighty-eight percent of them needed PPE and 67.6% needed training. The training contents mostly needed were prevention of infection at work, especially bloodborne and respiratory tract infections and enhance practical skill in using PPE (61.2%), respectively. Conclusion: FRs are still at high risk of acquiring bloodborne infections at work. Educating FRs on infection prevention and providing them with sufficient PPE should be emphasized.

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Design, development and implementation of an electronic platform for data collection and analysis of healthcare-associated infections: a pilot program

MORGAN HESS-HOLTZ[1]; RODERICK CHEN[2]; LISSETTE CHANG[3]; SEAN GREGORY[4]; SILVIO VEGA[5]; GABRIELLE BRITTON[6]

1.SPONSOR CNPH; 2. COMMITTEE FOR PREVENTION AND CONTROL OF HOSPITAL-ACQUIRED INFECTION, DEPARTMENT OF PREVENTIVE MEDICINE; 3. NATIONAL STI/HIV/AIDS PROGRAM, MINISTRY OF HEALTH; 4. DEPARTMENT OF HEALTH POLICY AND MANAGEMENT, UNIVERSITY OF SOUTH FLORIDA; 5. DEPARTMENT OF PREVENTIVE MEDICINE, ARNULFO ARIAS MADRID MEMORIAL HOSPITAL, SOCIAL SECURITY SYSTEM; 6. INDICASAT-AIP

Introduction: Hospital acquired infections (HAI) are serious preventable events. Prior to this project, HAI rates throughout a 900 bed tertiary-care hospital in Panama City, Panama were calculated manually resulting in many inefficiencies including, delays in reporting, transcription errors and calculation errors making it difficult to implement timely interventions or make decisions. Intervention: This pilot project created and implemented an electronic data capture platform to reduce the gap between collection and analysis of HAI in one hospital to engender evidence-based decision making and reduce incidence of infections. An innovative three-prong approach mitigated the existing limitations of the platform integration in the hospital underscoring: 1.) quality control, 2.) supervision and monitoring, 3.) human resource training and empowerment. Results: All existing paper-based forms used by the infection control department for HAI are now digitized for data collection. The platform aggregates and transforms this information in different dashboards that display graphs of key indicators for infections throughout the hospital. Additionally, reports generate standardized calculations by a myriad of co-variables. Conclusions: This project is currently on-going. Real-time availability of information has been critical to make time-sensitive decisions regarding infection control interventions as well as prevention of future outbreaks. The key to success of this project has been the inclusion and feedback of all existing infection control employees in the hospital from the inception of this project. At the end of the pilot testing period (February 2018) this platform is intended to be adapted and implemented in more public hospitals.

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Prevalence of *K. pneumoniae* blakpc positive in the intensive care units of Guayaquil-Ecuador

CARMEN SORIA[1]; CLAUDIA SORIA,[2]; MIGUEL CHUNG SANG,[3]; ANGELA MENDOZA[1]; MARCIA APOLO[4]; CESAR NARVAEZ,[5]

1. UNIVERSIDAD CATÓLICA DE SANTIAGO DE GUAYAQUIL; 2. LABORATORIO CLINICO SOSEGAR. DOCENTE UNIVERSIDAD DE GUAYAQUIL; 3. UNIVERSIDAD DE ESPECIALIDADES ESPÍRITU SANTO; 4. HOSPITAL DE INFECTOLOGÍA "DR. DANIEL RODRÍGUEZ"; 5. HOSPITAL LUIS VERNAZA

Introduction: In the last decade, a worldwide increase in the prevalence of *Klebsiella pneumoniae* producing KPC carbapenemase has been observed, which is associated with high morbidity and mortality. In Ecuador, the prevalence of carbapenem resistance is high according to data from the Whonet surveillance network. Objectives: To identify the frequency of colonization and infection by *K. pneumoniae* KPC in the intensive care units (ICUs) in Guayaquil, Ecuador. Methods: The study was performed in 7 adult ICUs during February to April 2016. The search for colonizers was performed by bacteriological culture (CDC method) of a perineal and inguinal swab. Samples were collected weekly for all patients with more than 48 hours of hospitalization and on admission if they were transferred from another hospital unit. The strains of *K.pneumoniae* with carbapenem resistance (disk diffusion.CLSI) were confirmed phenotypically and by polymerase chain reaction for the *bla*$_{KPC}$ gene. Data analysis was performed using the EpiInfo statistical package. The study was approved by the Ethics Committee of the Catholic University of Santiago de Guayaquil. Results: 1116 swab samples were processed from 685 patients. 236 unique isolates of *K.pneumoniae* KPC were obtained. The prevalence of colonization was 34.45% (Range 9.8-4.4) more frequent in public than in private institutions ($p < 0.05$). 20% of the patients colonized with *K.pneumoniae* bla$_{KPC}$ were infected, surgical site infections and ventilator-associated pneumonia were the most prevalent infections (26.92% n: 14). Conclusions: The high prevalence of *K.pneumoniae* bla$_{KPC}$ positive suggests the implementation and / or reinforcement of infection control measures to control this multidrug-resistant microorganism.

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A comparison of hand hygiene practices: patient and community perception versus directly observed compliance

CELINA ZAYZAY; UDHAYASHANKAR KANAGASABAI MD MPH; KAYLA ENRIQUEZ MD MPH; MICHELLE NIESCIERENKO MD MPH

SPONSOR CNPH

Background: Hand hygiene (HH) is the most important means to prevent the spread of hospital acquired infections. In Liberia, poor infection control practices, exacerbated Ebola transmission during the outbreak. No prior recorded data on HH compliance of Liberian healthcare workers. Aim: To assess baseline HH compliance in Liberian hospital workers as compared to patients and community perceptions. Method: A powered sample of healthcare workers were observed for HH using a validated direct observation tool. HH audits were conducted in public hospitals. Healthcare workers were observed during routine patient care for HH compliance, non-compliance and intent. A survey was done of patients at all public hospitals and of community members in the catchment area. The patients/community members were asked about their perception of HH practice at the facility, specifically whether they observed the clinician wash their hands before and after patient care. Cluster randomized sampling was use to obtained a powered sample size. Results: HH audits were done at 24 hospitals with an average compliance of 46% (range 11% to 76%). Patients/community members reported high compliance at 88-97% for HH before and after patient care. This high compliance rate observed by patients/communities increased significantly after a training intervention. Conclusion: Baseline HH was shown to be far below the international standard. This was discordant with the perception of patients/community members who reported high rates of hand washing by their healthcare providers. Further work needs to be done to improve directly observed HH compliance by healthcare workers.

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Impact of the applied preventive measures on the healthcare associated colonisation reduction of *Acinetobacter* in a tertiary hospital 2001-2016)

RAFAEL ORTÍ-LUCAS; JULIO MUÑOZ MIGUEL; ALBA SAA CASAL; MERCEDES SALVADOR, AGUILÁ; MIGUEL CALVO VALENCIA; CRISTINA GONZÁLEZ STEINBAUER

HOSPITAL CLÍNICO DE VALENCIA - UNIVERSIDAD CATÓLICA DE VALENCIA SAN VICENTE MÁRTIR, SPAIN

Introduction: Acinetobacter Calcoaceticus-Baumanni (ACB) is an emergent multidrug-resistant organism (MDRO) of global importance. Objective: To know the relative effectiveness of applied preventive measures in our hospital on the reduction of healthcare-associated infections (HAIs) incidence caused by ACB (54%) in the last 16 years. Method: After estimating the incidence of patients colonised/infected by multiresistant ACB per 1000 days of stay (global and stratified according to intensive care, high risk and other units), the effectiveness of several preventive measures was measured. The rates for the periods of application of the interventions in the continuous improvement process were estimated, and rate ratios comparing the initial period (2001-2004) were calculated. Results: The 958 patients in our sample are equivalent to 0.34 colonisations per thousand during the 2001-2016 period. The initial rate (0.55) decreased progressively with the interventions that took place in 2005-2006: isolation precautions (0.41), 2006-2007: hand hygiene (0.33), 2009-2010: decolonisation and bacteraemia zero program (0.23) and 2011-2016: multidisciplinary and Pneumonia zero program (0.25); reaching an all time low on 2016 (0.08). The impact of isolation precations and the automation of endoscope disinfection in thoracic surgery (-74%), the introduction of bacteraemia zero in critical patient units (-65%) and the promotion of hand hygiene in other units (-48.6%) are worth noting. Conclusions: The effectiveness of preventive measures depends on the intensity of their application, a team's dedication and the characteristics of the different units. Despite multidrug-resistance, the appropriate interventions have almost allowed the eradication of ACB.

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Reducing Gram-negative multiresistance in Pediatric Intensive Care Unit: success of a multimodal strategy

ANDRÉ RICARDO ARAUJO DA SILVA

UNIVERSIDADE FEDERAL FLUMINENSE, STATE OF RIO DE JANEIRO, BRAZIL.

<u>FULL SCHOLARSHIP AWARD</u>

Introduction: Increase of a multiresistant-bacteria causing healthcare-associated infection (HAI) is a global concern and there's an urgency of measures to reduce rates of them.
Objective: to describe a package of interventions to reduce rates of Gram-negative causing HAI in a PICU. Material and methods: Before and after study design. Four interventions were implemented at same time in PICU: 1) restriction policy of carbapenem antibiotics, 2) point prevalence of antibiotic each two month by year, about use in the unit (including dose, interval, indication), 3) daily discussion of each patient using antibiotics, even in weekends and holidays about necessity of antibiotics, 4) De-escalation of broad spectrum antibiotics, according to the sensibility of bacterial samples. Results: In a year of pre-intervention (2015), density of incidence of all HAI in PICU were 12,4 per 1000 patients-days and criteria of resistance within Gram-negative bacteria was present in 7 of 10 isolates (70%) that caused HAI in PICU. In the year after intervention, global rates of HAI decreased to 11 per 1000 patients-days and number of Gram-negative resistant samples causing HAI decreased to 4 in 11 isolates (36.3%) (p=0,13). The four isolates of Gram-negative bacteria were: *Klebsiella pneumoniae* ESBL producer, *Acinetobacter baumannii* resistant to carbapenem, *Pseudomonas aeruginosa* resistant to carbapenem and *Enterobacter cloacae* ESBL producer. Conclusion: After implantation of systematic interventions, we have success in reduce rates of multidrug-resistant Gram-negative bacteria causing HAI. Multimodal strategy about judicious use of antibiotic could help healthcare institutions in reducing multiresistance even in intensive care units.

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Evaluation of biofilm formation in complex design orthopedic surgical instruments

LILLIAN KELLY DE OLIVEIRA LOPES, DAYANE DE MELO COSTA, HELEN HU, EVANDRO WATANABE, ANACLARA FERREIRA VEIGA TIPPLE, KAREN VICKERY

NURSING SCHOOL OF FEDERAL UNIVERSITY OF GOIAS, FACULTY OF MEDICINE AND HEALTH SCIENCES/MACQUARIE UNIVERSITY, NURSING SCHOOL OF SÃO PAULO UNIVERSITY, SÃO PAULO, BRAZIL.

<u>FULL SCHOLARSHIP AWARD</u>

Introduction: The depth gauge and flexible drill bit are complex design orthopedic surgical instruments and the greatest challenge for processing is ensuring instruments are properly cleaned so as to prevent biofilm formation. Objective: To determine cumulative microbial contamination in complex design orthopedic surgical instruments subjected to 20 cycles of contamination, cleaning and sterilization. Method: New depth gauges and flexible drill bits were contaminated by incubating in a solution containing Staphylococcus aureus (ATCC 25923), tryptone soya broth and 5% sheep blood for five minutes. Instruments were dried for four hours and then subjected to either a) rinsing in deionized water, b) manual cleaning or c) manual cleaning followed by automatic cleaning (gold standard cleaning). Instruments were then sterilized by autoclaving prior to recontamination. Analysis of microbial load by colony forming units and protein were conducted in triplicate. Scanning electron microscopy (SEM) was used to visually confirm biofilm presence. Results: without correct cleaning, instruments were highly contaminated with protein (1699µg/flexible drill bit. Viable bacteria were not detected in any of the instruments despite the presence of residue and biofilms, detected by SEM, in the lumen of all the instruments even after gold standard cleaning. Conclusion: Biofilms were evident in the lumen of depth gauges and flexible drill bits following 20 cycles of contamination and cleaning. Although the depth gauge could be disassembled, its lumen allows accumulation of residue even using the best method of cleaning. The design of these surgical instruments is not secure for reprocessing.

COMMENTED POSTER

[70]
Point-of-care diagnostic and raise of disease awareness impact for *Clostridium difficile* detection

ANGELA FIGUEIREDO SOLA; GABRIEL TROVA CUBA; FABIANA SILVA VASQUES; YOLANDA COPPEN MARTIN; REGINA MEDEIROS TRANCHESI; ANTONIO CARLOS PIGNATARI

HOSPITAL NOVE DE JULHO, SÃO PAULO, BRAZIL.

Introduction - Clostridium difficile (CD) is a source of nosocomial diarrhea; prompt diagnostic of C. difficile diarrhea (CDD) is needed since implementation of environmental measures could avoid CD dissemination among hospitalized patients. DNA-based test (PCR), which detect toxigenic strains, provide higher sensitivity and specificity to diagnose CDD than enzymes immunoassays (EI) and point-of-care Cepheid GeneXpert® was incorporated into our clinical practice in 2014. A local campaign risen awareness about CDD epidemiology and investigation during 2015. Methods – Enzymes immunoassays (ELISA) and DNA-based test (XPert® C. difficile) collected to investigate CDD into a private hospital in São Paulo were retrospectively evaluated; methodology used and frequency of positive results between 2015 and 2016 were compared. Qui-square test was performed to evaluate independence between variables. Results – 384 patients were CDD investigated in 2015 (252 patients using EI, 155 using PCR, 27 positive patients) and 509 patients were investigated in 2016 (213 EI, 354 PCR, 62 positive patients). CD detection through EI test statistically differed comparing 2015 (9/353 tests) to 2016 (18/310 tests) (p=0,034). After campaign, DNA-based tests were more frequently (p<0,001) performed to investigate CDD and PCR positivity rate for CD toxigenic strain result remained stable (n=27/236 tests in 2015 and n=67/587 in 2016). CD rate per 1.000 admissions statistically differed after campaign (1,41 cases in 2015 vs 2,6 cases in 2016, p=0,006) and no local outbreak was reported. Discordance between tests were found in 47,8% patients (n=11/23). Conclusion – raising the awareness about CD and implementing a more discriminative test into clinical routine practice lead to a statistically increase of CD detection. Although clinical specificity of positive PCR CD test is debatable, reducing CD false-negative tests frequency is an important issue for Infection Control Committees.

[73]
Hand hygiene and infections caused by drug-resistant bacteria in a private hospital in São Paulo

JOAN PINTON PINTON TOMALERI[1]; MARCELLE GONCALVES DA ROCHA[2]; KAROLINE MELLO GAMA[2]; RAISA BEATRICE MOURAO NOVO[2]; DIANA HILDA TEIXEIRA FRANÇA[2]; GLAUCIA FERNANDA VARKULJA[2]

1.ASSOCIAÇÃO CONGREGAÇÃO DE SANTA CATARINA; 2.HOSPITAL SANTA CATARINA, SÃO PAULO, BRAZIL.

Introduction/ objectives: Bacterial resistance is a huge problem for public health because it represents a threat for not having therapeutic options. Faced to this fact, prevention should be viewed as a priority by the healthcare services. It is well known that the most important, efficient and cheaper action to interrupt the chain of microorganisms transmission is hand hygiene performed correctly and at the right moments. The purpouseof this article is to demonstrate a reduction of infections by multidrug resistant microorganisms for a better adherence to the practice of hand hygiene. Interventions: From January 2014 to December 2016, specific outcome indicators was tracked (Infection incidence densities of multidrug resistant microorganisms: methicillin resistant Staphylococcus aureus, vancomycin resistant Enterococcus, carbapenens and/ or polymyxins resistant Enterobacteriaceae, Pseudomonas spp. and Acinetobacter spp. and Clostridium difficile, compared to direct process indicators (assessment of observational adherence to the World Health Organization five moments for hand hygiene) and indirect (consumption of alcoholic product per patient-day) on the institutional performance in hand hygiene. Results: A median increase in a direct adherence of 67% (from 43% to 72%) from April 2015 (1878 observations). It was also evidenced a 25% increase in the median of indirect adherence, from 39.8 to 50 ml per patient-day. The median of multidrug resistant in healthcare associated infection was 1.2 to 0.8 per thousand patient-days, presenting a reduction of 33%. Conclusions: Although there are several factors related to the incidence of infection caused by multidrug resistant microorganisms, the sustained improvement of hand hygiene practices seems to have had an impact in the prevention of transmission of these microorganisms and consequently the reduction of healthcare-associated infections caused by these germs in our institution

[109]
5 steps in hand hygiene: observing is still necessary

ANGELA FIGUEIREDO SOLA; FABIANA SILVA VASQUES; YOLANDA COPPEN MARTIN; REGINA MEDEIROS TRANCHESI; ANTONIO CARLOS PIGNATARI; FABRICIO LIMA TAVARES; CINTIA PIMENTEL REIS; PATRICIA RODRIGUES ROSA; VANESSA PAES SOUTO; SILVIA BUENO; ADRIANA PEREIRA TORRES; LILIAN BETIN RODRIGUES; DENISE JOSE; ELIANETE SANTOS

HOSPITAL NOVE DE JULHO, SÃO PAULO, BRAZIL.

Introduction: Hand hygiene (HH) is the simplest, least expensive and most effective way of preventing infections. Considering the challenge in instilling actions that elevate the practice of health-assistance professionals to practice the 5 steps, thoroughly observing said action is of crucial importance. Objective: Monitor the practice of the 5 steps in HH and evaluate the impact of those actions done in the monitored unit by the professionals themselves. Method: In 2015 the need for evaluating the practice of the 5 steps in HH was discussed, and for that the observation of such procedures and the analysis, performed in real time, of timely moments for HH and their conformity. Said observations started in 2016. For evaluation reasons a checklist was created, which described the professional category and pointed out the assessment in fulfilling the timely moment for HH. Those observations were carried out by health professionals in their own working unit. For each working day, the health professional needs to evaluate at least one other health professional. To become a "HH inspector", the health professional needs to firstly attend training provided by the infection control services unit. Results: From the 30 hospitalization units, 13 carried out monthly observations, those being intensive care, oncology, onco-hematology, pediatrics, dialysis and the special treatments unit. The global conformity of the practice of the 5 steps in HH was of 54.1% in the first quarter of 2016; 57.7% in the second; 52.1% in the third and 62.6% in the fourth. In the yearly evaluation, the conformity was of 56.1%. Although the consumption in mL per patient was of 70.7 in said year, it was observed that the timely moment was not always completed. Conclusion: The observational method was an efficient approach to continuously monitor hand hygiene practices, and the actions taken by the health assistance professionals helped to stimulate and promote the practice of the 5 steps in HH.

[111]
How to improve safety in the largest philanthropic organization: the Salus Vitae program

JOAN PINTON TOMALERI; CAMILA FERNANDA LORENZ; CAMILA PHILBERT LAJOLO; CAMILA SARDENBERG

ASSOCIAÇÃO CONGREGAÇÃO DE SANTA CATARINA, SÃO PAULO, BRAZIL.

3rd PLACE POSTER AWARD

Introduction / Objectives:

It's an individual's right receive a quality health care and health services should provide care being effective, efficient, safe, and ensures patient satisfaction in whole process. Among the major concern about patient safety is to reduced risk of incident Healthcare-associated infections (HAI). HAIs are considered a major public health problem worldwide, because of the significant risk to users of health services, especially in hospital settings. The objective was to reduce suffering by reducing device associated infections by 50% related to invasive devices (Catheter-Associated Urinary Tract Infection (CAUTI), Central Line-associated Bloodstream Infection (CLABSI), Ventilator-associated Pneumonia (VAP)), care for adults admitted to the Intensive Care Unit (ICU) from July 2015 to March 2017. Methods: Application of Improvement Science Methodology, Breakthrough Series (BTS). An expert group was created to design a driver diagram to direct all to reach the goal. After this, selected members from ICUs formed 14 collaborative groups with 5 members each. This program lasted 18 months, with 4 learning sessions and four action period. Besides that, all the team had monthly support through: e-mail, extranet, web calls, local visits and monthly reports. Results: The results showed positive impact at heath assistance, with reduction in infections: CAUTI, CLABSI and VAP. The medians at the beginning of the design of CAUTI, CLABSI and VAP topographies were respectively 5.62; 4.43; 18.10 until the date of March 2017 the topographies obtained median of 2.43 for CAUTI, 2.59 for CLABSI and 10.89 for VAP. Conclusions: The implementation of the methodology of improvement science - BTS approach proved to be effective in reducing HAI in ICUs in Brazil. High degree of belief that goals for HAI reduction will be achieved, but more time might be required. So this program has great reliance on multidisciplinary teamwork and specific knowledge.

[157]
Is the *Staphylococcus aureus* still susceptible to chlorhexidine and mupirocin in the NICU?

CAMILA ALMEIDA[1]; LIVIO DIAS[2]; CHAYENNE MATSUMOTO[1]; GISELY VETUCHE[1]; MARIANA TOBARA[2]; SILVIA COSTA[3]; ANA PAULA MARCHI[3]; ROBERTA MARTINS[3]; ELISA KUSANO[1]; ROSANA RICHTMANN[1]

1.SANTA JOANA HOSPITAL AND MATERNITY; 2.PRO MATRE PAULISTA; 3. HOSPITAL DAS CLINICAS / FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

S. aureus infections cause significant morbidity and mortality in neonatal intensive care units. MRSA/MSSA strains from NICU babies were studied in regard of clinical and molecular epidemiology characteristics. 38 strains were analyzed during an outbreak at NICUs from two different maternities hospitals from Sao Paulo, named as Hosp A and Hosp B. PFGE and PCR multiplex was performed to detect mupA (marker of high-level mupirocin resistance) and qacA/B (marker associated with chlorhexidine resistance). Complete genome sequencing of the strains with high MIC for chlorhexidine was performed. The outbreak started on Dec/2016 simultaneously in both hospitals (Hosp A 70-bed NICU and Hosp B 120-bed NICU, divided in 4 different floor units). Both hospitals use chlorhexidine for bathing all NICU babies for the last 15 years. Hosp B performs routinely pre surgical surveillance and decolonization with mupirocin colonized babies since 2011. During the outbreak a weekly universal screening was implemented. MRSA/MSSA colonized babies were placed on contact precaution and initiated decolonization with intranasal mupirocin, oral wash with of non-alcoholic chlorhexidine solution and chlorhexidine bath. 38 samples were analyzed from both hospitals, MRSA infection (8), MRSA colonization (18) and MSSA infection (10) MSSA colonization (3). Bloodstream infection was the most prevalent infection. The median of gestational age and birth weight of infected babies were 30 weeks and 1.365 g respectively. The PFGE demonstrated that it was a clonal outbreak in each NICU, but different clonal strains between Hosp A and B, all 4 floor units. Mupirocin resistance was found on one MSSA strain and one MRSA, both as colonization. Chlorhexidine resistance was detected on three MRSA (all colonization case). One of the MRSA strains was resistant to both. Despite the prolonged use of both products at NICU a low rate of resistance was found that reinforce us to keep using this kind a prevention measure.

[184]

Impact of MDRO surveillance in patients with risk factors for colonization at hospital admission

EDUARDO CAMACHO[1]; LIGIA MARIA ABRAAO[1]; CRISTIANE SCHMITT[1]; MARCIA MARIA BARALDI[1]; LUCIANA GOUVEA A. SOUZA[1]; AMANDA LUIZ PIRES MACIEL[2]; PAULA DE ALMEIDA[1]; INGRID PAULA SANTOS NASCIMENTO[1]; ÍCARO BOSZCZOWSKI[1]

1.OSWALDO CRUZ GERMAN HOSPITAL; 2. SCHOOL OF NURSING, UNIVERSITY OF SÃO PAULO

THE BEST POSTER AWARD

Introduction: Surveillance cultures (SC) allow early identification of colonization by MDRO, thus minimizing the spread of these agents in the hospital environment. Objetictive: to investigate the positivity of SC in patients with risk factors at hospital admission. Methods: from september 2014 to december 2016, SC were analyzed at a private hospital with 350 beds in São Paulo city. for this purpose, it was evaluate all patients placed in an empirical contact precaution (ECP). the criteria used to establish the ECP were: patient with hospitalization in the last 30 days, hospitalization in another service in a period longer than 72 hours, coming from a long-term institution or home-care, using antibiotics in a superior time or equal to 14 days, end submitted to hemodialysis in another service, wearing invasive devices or in diaper use. The process of installing the ECP includes sampling 3 swabs in combined sites: axillary, inguinal and rectal; culture of invasive devices and/or wound and/or ostomy, except vascular catheter. the cases were compiled by the number of installed ECP. Among the number of positives, that is, MDRO identification, a positive sample was analyzed, so that these agents were classified according to genera and species: carbapenem resistant Gram Negative Bacilli (CR-GNB), vancomycin resistant enterococci as Gram Positive Cocci (GPC) and Clostridium difficile (CD). we are able to analyze 50% of all admitted patients on ECP in this period. Results: 1,844 cases of ECP were identified in the proposed period, of which 295 (16%) were remained in contact precautions due to MDR identification during admission surveillance. Analyzing 148 (50%) of all positive cultures, 13.5% were obtained for GPC, 64.8% for CRGNB, 9.4% for GPC + GNB in the same sample and 12.1% for CD. Conclusion: the admission SC of MDRO proved to be an effective tool of early identification of patients harbouring such agents and thus probably enhancing the prevention of their spread.

[258]
Staff experiences of caring for patients with extended-spectrum b-lactamse producing bacteria -AQ

SUSANNE WIKLUND[1]; INGEGERD FAGERBERG[2]; ÅKE ÖRTQVIST[3]; KRISTINA BROLIDEN[4]; ANN TAMMELIN[4]

DEPARTMENT OF INFECTION CONTROL AND HOSPITAL HYGIENE, STOCKHOLM COUNTY COUNCIL, SWEDEN   B DEPARTMENT OF MEDICINE, SOLNA (MEDS), UNIT OF INFECTIOUS DISEASES, KAROLINSKA INSTITUTET, STOCKHOLM, SWEDEN C DEPARTMENT OF HEALTHCARE SCIENCES, ERSTA SKÖNDAL UNIVERSITY COLLEGE, STOCKHOLM, SWEDEN D DEPARTMENT OF COMMUNICABLE DISEASE CONTROL AND PREVENTION, STOCKHOLM COUNTY COUNCIL, SWEDEN E KAROLINSKA UNIVERSITY HOSPITAL AND CENTER FOR MOLECULAR MEDICINE, STOCKHOLM, SWEDEN

Background: Patients who become carriers of antibiotic-resistant bacteria are sometimes stigmatized by health professionals. Staff members' fears of becoming infected could affect their willingness to care for these patients. Methods: The purpose of this study was to increase the knowledge of what it means for staff in acute care settings and nursing homes to care for patients with extended-spectrum b-lactamase (ESBL)-producing bacteria. Assistant nurses, registered nurses, and physicians from acute care settings and nursing homes were interviewed. A modified version of Grounded Theory was used for the analysis. Results: The analysis resulted in the core category "to operate as an expert in a chaotic environment" in acute care settings. Despite a lack of resources, hospital staff try to provide the best possible care for patients with ESBL. The analysis of the interviews in the nursing homes resulted in the core category "the employee who, despite uncertainty, provides good care." Despite some fear, and a lack of knowledge, the study participants tried to provide the residents with good care. Conclusion: Staff in acute care settings and nursing homes must have adequate knowledge and reasonable working conditions to be able to provide high-quality care for patients and residents who are ESBL carriers.

[259]
Training of human resources in infection control

FERNANDO ESPINOZA

PEDIATRA NEONATÓLOGO, EPIDEMIÓLOGO HOSPITALARIO

Introduction: Surveillance, prevention, and control of nosocomial infections are precarious in Bolivia. There are no clear national policies in the Ministry of Health that can be applied in hospitals, hence the rates of nosocomial infections are probably one of the highest in Latin America. Objectives: Training healthcare professionals to a master's degree level in epidemiology and infection control to help personnel develop infection control policies across all Bolivian hospitals. Intervention: In Bolivia, there are very few qualified professionals who are concerned about this situation. For this reason, it was decided to develop a master's degree program in the Andina Simón Bolivar University which is an accredited institution. The master's degree course is known as "Clinical and in-patient Epidemiology" or "Epidemiología Hospitalaria y Clínica", and it is supported by prominent foreign professors who began classes last year. The main topics covered are summarized below: In-patient epidemiology; Epidemiological research, Health based on evidence and microbiology. To date, this course is taught in several cities and has 120 registered students. The demand and expectations are quite high. Outputs: Trained professionals at a master's degree level will form a strong Infection Control Association and will develop national policies. They will advise the Ministry of Health to revert the worrying rates of nosocomial infections. Conclusions: Having qualified healthcare workers means that quality management system will improve, hence the incidence of infections can be under control.

[261]

Infection prevention and control in the doctor's office - an unrecognized risk to patient safety

BENJAMIN KUNG

COLLEGE OF PHYSICIANS, CANADA

Introduction: Healthcare resources for infection prevention and control (IPAC) are traditionally allocated to government operated hospitals and "high risk" community settings (e.g. private surgical, diagnostic imaging, medical laboratory, etc.). Triggered by identification of sterilization concerns in a family medicine clinic, the College of Physicians and Surgeons of Alberta (CPSA) set out to assess IPAC in unaccredited medical clinics to gauge and resolve risks to patient safety. Aims: Determine if unaccredited medical clinics adhere to best practices for general infection prevention and control (e.g. hand hygiene, environmental cleaning, biomedical waste management and disposal, medication/vaccine injection safety) and medical device reprocessing (cleaning, disinfection, sterilization of reusable medical devices). Interventions: Onsite auditing by senior infection control practitioners using a set of standards established under provincial, national, and international best practice recommendations. Results: 32% of clinics failed initial audit and required re-auditing to confirm resolution of deficiencies. 5% of clinics had deficiencies exceeding the threshold for reporting to the public health department for exposure risk assessment. Critical deficiencies were identified in medical device reprocessing, hand hygiene, environmental cleaning, and medication/vaccine injection safety. Conclusions: Although still recognized to be a lower priority than hospital, private surgical, diagnostic imaging, and medical laboratory environments, the unaccredited medical clinic or "doctor's office" is not without infectious risk to patient safety. Regulatory jurisdictions have a responsibility to ensure monitoring of IPAC practices in these settings to safeguard public health and promote patient safety.

[268]
VAP: a closer look at bundle compliance

JANETTE MORLESE; RAMONA RODRIGUES

MCGILL UNIVERSITY HEALTH CENTER, CANADA

Background: Ventilator Associated Pneumonia (VAP) rates in our trauma intensive care (ICU) center in Montreal have traditionally been high among ventilated patients. Following the implementation of a 4 intervention VAP bundle, the rates decreased. 3 of the 4 interventions had high compliance. This in-depth four month prospective study was undertaken to assess the impact on the use of a collective orders on the 4th intervention to enhance compliance. Methods: The study was undertaken in a 26 bed trauma ICU. Compliance with the 4 VAP interventions namely, head of the bed elevation (HOB), mouth care, and use of CHG mouth wash was assessed through process surveillance (audits). The impact of a collective order that permits the nurses to initiate the spontaneous awakening trial (SAT) was assessed using a survey to determine nurses' compliance. VAP infections were identified using standard NHSN definitions. Patients were excluded from the audit for HOB elevation for medically contraindicated reasons. Results: Compared to the 6 month period prior to the study, there continued to be increases in compliance with HOB (36%), use of CHG mouth wash (23%), mouth care (17%), while SAT showed no change. The survey indicated that nurses were comfortable with 3 of 4 interventions, but were not ready to initiate SAT, despite a collective order. Conclusion: Nursing collective orders for SAT are ineffective and new ways to ensure SAT compliance is required. A team "time out" approach with physician presence may be necessary.

[285]
Antimicrobial properties of selected copper alloys against *Acinetobacter baumanii*

ANNA RÓŻAŃSKA[1]; AGNIESZKA CHMIELARCZYK,[1]; DOROTA ROMANISZYN[1]; MAŁGORZATA BULANDA[1]; MONIKA WALKOWICZ[2]; PIOTR OSUCH,[2]; TADEUSZ KNYCH,[2]

1.JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE; 2.AGH UNIVERSITY OF SCIENCE AND TECHNOLOGY, POLAND.

Introduction: In recent years, in Polish hospitals, especially in ICUs, Acinetobacter baumanii (AB) infections, including multidrug resistant strains, are a significant problem. Traditional methods of environmental disinfection in this case are not always sufficiently effective. Aim: The aim of this study was to evaluate the antimicrobial properties of the popular copper alloys potentially dedicated for equipment for healthcare units against AB. Material and method: The study was conducted using a more rigorous methodology to confirm antimicrobial properties than protocols recommended by American EPA and the Japanese Standard. The key assumptions of our procedure were: the wet exposure of the suspension of Acinetobacter baumannii in TSB solution for time periods between 30 to 300 minutes at room temperature. Copper alloys selected for the study were: tine bronze CuSn6, brasses CuZn15 and CuZn37 and new silver CuNi12Zn24.Results: The strongest antimicrobial properties against chosen AB strain were observed for CuSn6, the weakest for CuZn37. However, for all tested alloys their bactericidal and bacteriostatic properties were confirmed - within 120 minutes the bactericidal properties were confirmed for CuSn6, for other tested alloys - bacteriostatic. The bactericidal properties within 300 minutes were also confirmed for brass with 85% copper content and for new silver. Conclusion: The introduction of equipment / touch surfaces made from materials with antimicrobial properties can help to eliminate microbes from hospital environment and thus improve patient safety. The project was financially supported by The Polish National Center for Research and Development awarded on the basis of decision PBS3/A9/32/2015.

[316]

Attributable cost to surgical site infection subsequent to osteosynthesis procedures in a high complexity medical center in Colombia

LAURA PARDO BUILES

SOMER CLINICS. COLOMBIA

Introduction: The number of patients requiring osteosynthesis material to treat their fractures has increased in the last decades, so that more than 1200 surgical procedures involving implants are performed every year where this work was performed. The lack of evidence from local studies shows a gap in the knowledge of the real impact of surgical site infection (SSI) in the region. Objective: To know the cost attributable to SSI subsequent to osteosynthesis procedures in the specialties of orthopedics, neurosurgery, maxillofacial surgery and plastic surgery in a high complex medical center in Colombia. Methods: Retrospective study of cases and controls paired by diagnosis, sex and age using the OPS / HCP / HCT / 16/00 protocol for direct costs. As cost indicators were used the days of stay from admission, both in the hospitalization services and the intensive care units (ICU); reinterventions in the operating room; microbiological cultures and consumption of antibiotics in defined daily dose (DDD).Results: The excess cost of the total cases was COP 73´530.000 ($ 24.510 USD) with an average cost per case of COP 7´353.000 (USD 2.451). The difference in days of in hospital stay between the cases and the controls was 26.6. the highest consumption of antibiotic DDD in cases was provided by ciprofloxacin, followed by rifampicin and vancomycin. Conclusions: The SSI after osteosynthesis dramatically impacts healthcare costs, increasing hospital stay, number of microbiological cultures, use of antibiotics, and reinterventions.

[324]

A proposal of competence-based education for infection control in undergraduate nursing courses in Brazil

ALINE MASSAROLI, JUSSARA GUE MARTINI, RODRIGO MASSAROLI

UNIVERSIDADE FEDERAL DA FRONTEIRA SUL, STATE OF SANTA CATARINA, BRAZIL.

PARTIAL SCHOLARSHIP AWARD

2nd PLACE POSTER AWARD

Introduction/Aims: This study aimed to construct a proposal for insertion of contents about infection control that allows the development of competencies for the prevention and control of health care associated infections in undergraduate nursing courses in Brazil. Methods: A mixed study was carried out the Delphi Technique with the participation of Brazilians professionals, 31 nurses and 8 doctors experts in infection prevention and control. For data collection, four interactive and sequential rounds were performed. Qualitative and quantitative data analysis were used, respectively, content analysis and descriptive analysis. This work was approved by the Committee of Ethics in Research with Human Beings under 818.839 / 2014. Results: The results allowed the construction of a list of competencies for the prevention and control of infections for the generalist nurse who should guide the teaching process. The proposed proposal proposes competency teaching for the prevention and control of infections in the curricula of undergraduate nursing courses in Brazil, through the development of a disciplinary axis that occurs in parallel throughout the undergraduate course, using hybrid methods with strategies of distance and face-to-face study, based on inverted class methodologies, stimulating the student to active learning, with the development of critical and reflexive thinking. Conclusions: This disciplinary axis will contribute to sensitize the students to the problems of infections, favoring their understanding about the elements involved and the ways in which they should be worked for the prevention of infections.

POSTER EXHIBITION

[22]
Evaluation of the benefit of the use of 100% silicone latex catheter compared to the latex catheter

TEREZINHA LUCIA F LOPES

HEC, STATE OF ESPIRITO SANTO, BRAZIL.

Introduction:Urinary Tract Infection (UTI) is responsible for 35% to 45% of all infections acquired in the hospital, which is the most common cause of nosocomial infection.About 70-80% of cases of infection occur in patients undergoing catheterization and 5 to 10% occur after cystoscopy or manipulation of the urinary tract. Objective: To evaluate whether the use of a 100% silicone delay catheter has benefits in the context of catheter-related urinary tract infection when compared to the use of latex catheters.Interventions:According to data from the Hospital Infection Control Service (SCIH) of the Central State Hospital in Vitoria, ES, the annual incidence rates of UTI / CVD fluctuate between 6.7 ‰ and 8.1 ‰ in the years 2014 and 2015. Intensive Care Units A and B of the Central State Hospital, who used a vesical catheter for delay in the period from March to August 2016.In the period from March to August 2016, 471 adult patients were admitted to the Intensive Care Units of the Central State Hospital. Of these, slightly more than 10% (54) underwent bladder catheterization for more than 48 hours. Conclusion:.We recorded 54 catheter insertions of delayed bladder catheter, (30) 100% silicone catheters and 24 lathex, 6 infectious events related to delayed bladder catheter, and only 1 of them was related to the silicone catheter, a patient with 46 days in the Unit Of intensive care, hypertensive, diabetic, sequelae, was 8 days with a silicone bladder catheter, evolving with UTI / CVD by Pseudomonas. Final considerations: We will continue to evaluate a larger sample of patients using a 100% silicone catheter, which may corroborate with some literature data and our initial impression that such a catheter acts as a protective factor, reducing the formation of Biofilm and, consequently, the reduction of Infection of the treatment Urinary related to catheter use.

[23]

Relationship between storage time after cleaning and microbial load in silicone tubes

JUNNIA PIRES DE AMORIM TRINDADE; LARA STEFÂNIA NETTO DE OLIVEIRA LEÃO VASCONCELOS; EVANDRO LEÃO RIBEIRO; ANACLARA FERREIRA VEIGA TIPPLE

UNIVERSIDADE FEDERAL DE GOIAS, BRAZIL.

this experimental study analyzed silicone tubes used in providing transoperative care, between september and november 2015, in a general hospital in the center-west region of brazil (ethical approval - protocol 1.277.077). objective: to determine the microbial load of silicone tubes immediately after cleaning and at different time intervals in the preparation field. the method was validated with two new and sterilized silicone tubes, which were artificially contaminated with 106 bacterial spores of geobacillus stearothermophilus, filled with sterile water and sealed in the extremities. the seals were then removed, and the water collected and filtered in millipore 0.45 µm membranes. the membranes were incubated (glasshouse/35ºc/24hs) in agar nutrient, placed in glass cartridges containing 1ml of saline solution, agitated in vortex (5'), and submitted to the calibrated curve technique for colony quantification. the same methodology was used for the experimental group (10 silicone tubes used in transoperative care), after the cleaning process according to the unit's routine, negative control (3 new tubes) and positive control (tubes in use and with visible organic material). there was no statistically significant difference when comparing the medium and extremities of the tubes ($p > 0.05$) at periods zero, 12 and 24 hours. microbial load increased in one order of magnitude in the logarithmic scale every 12 hours ($p < 0.05$), in the institution's conditions of cleaning and storage. the data found allow to infer that there is risk in the processing and maintenance of silicone tubes in the preparation field in the period analyzed, depending on the quality of cleaning.

[24]
Precautions in primary healthcare: development and validation a Brazilian educational strategy

ROSELY MORALEZ DE FIQUEIREDO[1]; ISIS BATISTA DIAS PASSOS[1]; SÍLVIA HELENA ZEM-MASCARENHAS[1]; JULIA YAEKO KAWAGOE[2]; SÍLVIA ALICE FERREIRA[3]; MARIA CLARA PADOVEZE, ADRIANA MARIA DA SILVA FELIX[5]; STEPHEN JAMES TIMMONS[6]

1. UNIVERSIDADE FEDERAL DE SÃO CARLOS, SÃO PAULO STATE, BRAZIL; 2. FACULDADE ISRAELITA ALBERT EINSTEIN; 3. SECRETARIA DE SAÚDE DO ESTADO DE SÃO PAULO; 4. UNIVERSIDADE DE SÃO PAULO; 5. UNI´SANTANA; 6. UNIVERSITY OF NOTTHINGHAM, UK.

Introduction: Health care workers' adherence to standard and specific precautions is essential to preventing transmission of microorganisms in primary health care (PHC). Little is known about the risk of infection transmission and practice of precautions in non-hospital settings, particularly in PHC. The use of new technologies, for example, the Webquest (WQ), a guided and investigative activity where the theme is presented in a creative way, can offer a new look at the relationship of teaching with work and, consequently, with knowledge. Aims: Develop and validate an educational strategy (WQ) on precautions for PHC. Methods: a two-step methodological study: WQ development and validation by expert judges by means of a 4-point Likert scale with Content Validity Index (CVI) ≥ 0.80 for approval of items. It was approved by the Ethics Committee for Research on Human Subjects. Results: Five WQs were developed, addressing the contents, namely: risk identification, hand hygiene, glove use, mask and cough etiquette, and discharge of sharps hazards. All with the same basic structure: presentation, introduction, topic synthesis, complementary bibliography and task (cases). All of them were validated by the specialists, with IVC of 0.9 for the appearance and ranging from 0.97 to 1, for the content. Conclusion: the five developed WQs were validated and it is believed that their use may have positive effects on increasing knowledge and self-adherence among PHC health professionals. The material can be used in Portuguese speaking places and with similar cultural and socioeconomic contexts.

[25]

Hand hygiene and glove use: adherence of the nursing team in a Brazilian hemodialysis service

ROSELY MORALEZ DE FIQUEIREDO; DARLYANI MARIANO SILVA; BIANCA MIRANDA MARQUES; FABIANA SOUZA ORLANDI; NATHALIA MALAMAN GALHARDI

UNIVERSIDADE FEDERAL DE SÃO CARLOS, SÃO PAULO STATE, BRAZIL.

Introduction/Aims: Because of the fact of high risk for development of healthcare-associated infections (HAIs) in hemodialysis and the importance of hand hygiene (HH) for this prevention, this study was developed aiming to analyze the adherence of nursing team to the practice of HH and the glove use. Methods: It was conducted in a hemodialysis unit, with 180 patients and 30 nursing professionals, in a city in the State of São Paulo – Brazil. Direct observation of HH and gloves use was performed in different stages involving a hemodialysis session. For the sample calculation, the Open Epi software was used. This study was approved by the Research Ethics Committee. Results: 1090 opportunities were identified being HH performed in only 168 (15,4%) of them. There was higher rate of adherence 24,4% to HH in opportunities after the procedure and 6,4% before. The alcoholic solution was used only 11,9% of the time that hands were hygienised. It was identified 510 gloving use opportunities, and these were appropriated in 233 observations, in 129 of them the same glove was used in more than one patient and 148 opportunities the glove was not used. The infrastructure for hand hygiene was also observed and it was considered appropriate in 100% of the unit. Conclusions: It was concluded that the rate of HH and glove use is far from ideal, increasing the risk of HAIs and compromising patient and professional safety. Therefore, it is necessary to review the work processes in hemodialysis to guarantee better practices of prevention of HAIs.

[26]
The professional experience as a scope of training for the prevention of hospital infections

TATIANE GONÇALVES GOMES DE NOVAIS DO RIO; LUANA DIAS RUIZ; ANALU COSTA MANCINI; DANIELLE APARECIDA PEREIRA; ANDREA RODRIGUES BALDIN MORAES; RODRIGO LEÃO DOS SANTOS; DAIANE PATRICIA CAIS; LETICIA NASCIMENTO OLIVEIRA BUDOIA; HELENO COSTA JÚNIOR

HOSPITAL SAMARITANO DE SÃO PAULO, BRAZIL.

Introduction:nosocomial infections have been the object of extensive deliberations, among them, as preventive actions so mechanistic is dissociated from the reflexive and individualized behavior culminating in the patient's injury.Objective:analyze the behavior of indexes of infection inpatient units after nursing team training.Methods:a cohort study, carried out in private hospital located in downtown São Paulo, divided into five steps: 1) analysis of the indicators of infection that occurred in inpatient units in the year 2015 and first quarter of 2016; 2) implementation and analysis of a questionnaire with 5 dissertative questions in sample of 50% the nursing staff of these units, randomly, in order to verify the knowledge of participants on the subject; 3) development and implementation of training on prevention of hospital-acquired infections with building bases in the responses of the questionnaires; 4) application of questionnaire in 50% of the sample team in order to verify content retention after 30 days of the last group trainned; 5) analysis of the indicators of infection of comparative form with the previous scenario, 3 months after training.Results:comparing the pre and post-training period cases of infection decreased 57.8%, with the greatest impact on bloodstream infections, which decreased by 88.9%, and urinary tract infections with a 71.5% decrease, in contrast respiratory tract infections that remained unchanged during the study period. Regarding the results of the questionnaire to evaluate retention of the knowledge learned, described in the third phase of the study, we observed that there was improvement in the technical concepts, but without statistical significance, fact that demonstrates that the employees know the concept but do not practice properly, becoming a behavioral and non-technical problem.Conclusion: trainings and development based on reality of work has impacted on relevant in infection prevention in the short and medium term.

[27]
Predictors of nosocomial infection in pediatrics and neonates: a pragmatic clinical study

LOANDA OLIVEIRA FUKUMA; MICHELE AGOSTINHO CONDÉ; HELENA MARIA DUTRA CAMPOS; LARRI VIEIRA JUNIOR; ANDRÉ RICARDO ARAÚJO DA SILVA; FRANZ PORZSOLT

UNIVERSIDADE FEDERAL FLUMINENSE, STATE OF RIO DE JANEIRO, BRAZIL.

Introduction: Several risk factors for healthcare-related infections (HAI) acquisition in a pediatric intensive care unit (PICU) are described in randomized trials. Objective: Identify which risk factors for acquisition of HAI (Healthcare Associated Infections) could be confirmed in all patients, under real conditions. Methodology: Prospective pragmatic clinical study performed at a PICU in Rio de Janeiro, during one year. We verified the presence of 10 selected risk factors reported previously in literature at admission, 7th, 14th and 30th day of hospitalization, respectively. All patients were included and categorized by risk groups. Results: We followed 306 patients during 2014, which 175 (57.2%) were male. At admission 156 (51%) patients had previous disease, 21 (6.9%) were colonized by multiresistant bacteria, 43(14%) used antibiotics before, 9 (12.8%) were hospitalized before, 41 (13.4%) had at least one invasive device and 97 (31.7%) had acidosis. The median score of admission for the pre-existing condition and with seven, fourteen and thirty days of hospitalization was 3.91, 4.54, 5.13 and 3.64 points, respectively. The rates of HAI verified on the 7th day 14th and 30th of hospitalization days were 3.8%, 16.3% and 25%. In all periods analyzed, the most common risk group had between 4 and 6 predictors factors to HAI acquisition. Mortality at 30th days was 12.4%. Conclusions: Length of stay in was the most important marker for the HAI acquisition. Categorization of patients by risk groups can contribute to optimize resources within the units, identifying which patients would be at higher risk of HAI acquisition.

[28]
Surgical site infection in craniotomies

LUANA LAÍS FEMINA; ANDRESSA BATISTA ZEQUINI; ANDREA CECÍLIA RODRIGUES MESTRINARI; FRANCISCO INALDO MENDES DA SILVA JÚNIOR; ISABELA DE SOUZA COLOMBO; LUCIANA ELENA TIRELLI KALTENBACHER; MÁRCIA WAKAI CATELAN; MELISSA MAIA BRAZ; LUCIANA SOUZA JORGE; VIVIANE ANHETI PRADO

HOSPITAL DE BASE DE SÃO JOSÉ DO RIO PRETO, SÃO PAULO STATE, BRAZIL.

Introduction: Craniotomy is surgery to open the skull with the aim of evaluating the meninges or the encephalic mass. This surgery evolves with infection in from 0.2-7% of cases; although this rate is considered low, the consequences can be serious with increased patient morbidity and mortality. Objective: To determine the incidence of surgical site infection after craniotomies. Patients and Methods: This retrospective study, performed in a teaching hospital and referral center in trauma in the state of São Paulo, included all patients submitted to craniotomy from January to December, 2016. All diagnoses, classified as superficial, deep or organ/space infections, complied with the definition of the Centers for Disease Control and Prevention (CDC). Results: Three hundred and seventy-one craniotomies were performed in the period; on excluding patients with previous infections, the total was 362 cases. The reasons for performing craniotomies varied: 95 to drain hematomas (26.2%), 98 to remove tumors (27.1%), 41 (11.3%) lobectomy / amygdalohippocampectomy, and 128 others (35.4%). Six infections in the bone flap preserved in an abdominal pocket (1.66%) and 53 cranial infections (14.64%) occurred during the year, totaling 16.30% of infections. As in March 2016, the infection rate was 42.86, a package of measures was introduced to decrease this number in April. The measures included a review of the nursing staff regarding preoperative care (chlorhexidine bath), the neurosurgery medical team regarding intraoperative infection prevention (surgical degermation, use of sterile field, intraoperative prophylaxis), and of the Intensive Care Unit staff regarding postoperative care (dressing, drain handling). In April 2016, the rate had dropped to 3.70%. Conclusion: This study shows an annual surgical site infection rate after craniotomy higher than that reported in the literature and the need for constant revision of the teams involved to decrease this rate.

[29]
Enterobacteria producing carbapenemase in a teaching hospital

LUANA LAÍS FEMINA[1]; ANDRESSA BATISTA ZEQUINI[1]; ANDREA CECÍLIA RODRIGUES MESTRINARI[1]; FRANCISCO INALDO MENDES DA SILVA JÚNIOR[1]; ISABELA DE SOUZA COLOMBO[1]; LUCIANA ELENA TIRELLI KALTENBACHER[1]; MÁRCIA WAKAI CATELAN[1]; MELISSA MAIA BRAZ[1]; LUCIANA SOUZA JORGE[1]; VIVIANE ANHETI PRADO[1]; CLINTON FABIO GOMES DA SILVA[2]

1.HOSPITAL DE BASE DE SÃO JOSÉ DO RIO PRETO; 2. FACULDADE DE MEDICINA DE SÃO JOSÉ DO RIO PRETO, SÃO PAULO STATE, BRAZIL.

Introduction: The increasing resistance to carbapenems is an threat in the fight against multiresistant bacteria. Objective: To assess the incidence of carbapenem-resistant enterobacteriaceae (CRE) in a teaching hospital. Methods: A retrospective study was made of the computerized medical records of patients with CRE admitted into a quaternary hospital of approximately 810 beds in the northwestern region of São Paulo State. Results: Seven hundred and twenty patients were positive for CRE; 556 (77.2%) of the infections were nosocomial acquired in this service (positive culture after 72 hours of hospitalization). Of these 556 patients, 292 (52.5%) had CRE only in surveillance swab cultures and were allocated to standard beds for contact precautions, and 264 (47.5%) presented clinical samples; 156 of the 264 (59.1%) received CRE-specific antimicrobial therapy. Thirty-seven patients (34.2%) did not receive treatment due to discharge or death prior to the culture results, nine (8.4%) patients were already taking polymyxin for other microorganisms at the time of the CRE infection and 62 (57.4%) patient samples were considered colonization. Of the 264 positive samples, 96 (36.4%) were urine, 86 (32.6%) tracheal aspirate, 29 (11%) blood and 53 (20%) other materials. One hundred and eleven (42.0%) strains were resistant to polymyxin. Of the isolated ERCs, 235 (89.0%) were Klebsiella pneumoniae, 28 (10.6%) Enterobacter cloacae and one (0.4%) Serratia marcescens. Conclusions: The emergence of microbial multiresistance is a public health problem with vigilance being fundamental due to the scarcity of new antimicrobial drugs, the high mortality and increased hospital costs, as well as the long survival and dissemination of these microorganisms in the hospital environment.

[30]
Severe sepsis due to hypervirulent and multidrug-resistant ctx-m-15-producing _Klebsiella pneumoniae_

VALERIA CASSETTARI[1,] LUIZA GOMES DE CAMPOS NASCIMENTO[1]; MIRIAM R FERNANDES[2]; VICTOR MATSUNO[1]; LOUISE CERDEIRA[2]; FERNANDA ESPOSITO[2]; SILVIA R SANTOS[1]; NILTON LINCOPAN[3];

1.UNIVERSITY HOSPITAL, UNIVERSIDADE DE SÃO PAULO; 2. SCHOOL OF PHARMACEUTICAL SCIENCES, UNIVERSIDADE DE SÃO PAULO; 3. INSTITUTE OF BIOMEDICAL SCIENCES, UNIVERSIDADE DE SÃO PAULO, BRAZIL.

INTRODUCTION: Hypervirulent variants of K. pneumoniae (hvKp) has emerged as a cause of infection. Acquisition of resistance genes has contributed for multidrug-resistant lineages. We report a case of CTX-M-15-producing hvKp-K19 belonging to the sequence type ST29. CLINICAL FEATURES: In May 2012, a 50-year-old male patient was admitted to a hospital in São Paulo, Brazil, due to severe sepsis, jaundice, and diabetes decompensation caused by a liver abscess. Positive blood cultures for susceptible K. pneumoniae (Kp15/421) lead to ciprofloxacin plus metronidazol therapy. Two months later, he presented with pyelonephritis and an ESBL-producing K. pneumoniae was isolated (KpHU763/12), which was treated with ertapenem. Three years later, he was readmitted to the hospital presenting urinary tract infection, where an ESBL K. pneumoniae (KpHU763/15) was isolated again, which was successfully treated with ertapenem; however, after 40 days, the patient was hospitalized due to severe sepsis produced by an ESBL K. pneumoniae (KpHU15/468) bacteremia of urinary origin. MICROBIOLOGIC FEATURES: In this last regard, whole genome sequencing of KpHU15/468 revealed that this hypermucoviscous strain belonged to ST29 and K19 capsular serotype, carrying blaCTX-M-15, blaOXA-1, blaSHV-1, blaSHV-83, catB3, aac(3)-IIa, aac(6`)Ib-cr, fosA, strA, strB, oqxA, oqxB, qnrB66, parC, sul2, dfrA14, tetA resistance genes; and mrkA, mrkB, mrkE, mrkF, mrkI, mrkJ, ybtA, ybtP, ybtO, ybtS, ybtT, ybtU virulence genes. Positive "string test" was confirmed and high-virulent background was confirmed by using an in vivo model of Galleria mellonella sepsis. CONCLUSION: Both hipervirulence and MDR contributed to severity, with formation of renal and prostatic abscesses, leading to nephrectomy, poor clinical outcome and death of the patient despite optimized antibiotic therapy. Microbiological investigation of strains of this sort must be performed in cases of K. pneumoniae infection of atypical presentation.

[31]

Follow-up of 1365 patients undergone by prostate biopsy at a private health service in São Paulo

PATRICIA MITSUE S SHIMABUKURO; FABRICIO PROSPERO MACHADO; LEANDRO GONÇALVES; MARCIO HENRIQUE DE ALVARENGA NASCIMENTO; CARLA MORALES GUERRA

PREVENT SENIOR OPERADORA DE SAÚDE LTDA, SÃO PAULO, BRAZIL.

Introduction: Ultrasound guided transrectal prostate biopsy is an invasive examination used for the histologic diagnosis prostate cancer. Most studies show low incidence complications, which are usually self-limited with hematuria, dysuria or transient transrectal bleeding. There are reports serious complications such as urinary retention, infectious event and major rectal bleeding. Objective: The objective study is to present evolution 1365 patients submitted to prostate biopsy from private health service in São Paulo. Methodology: Prospective study, January 2016 to December 2016 including all patients who underwent prostate biopsy guided by ultrasound. All patients were included the antimicrobial prophylaxis protocol which oral ciprofloxacin 500mg one hour prior to the test which was maintained for 3 days. During the period of 15 days after the examination all patients were monitored by electronic medical record identify possible complications. Results: During the study 1.365 prostate biopsies were performed. 80 patients (5.8%) sought medical care within 15 days after the procedure (mean time four days). The symptoms reported were fever (58; 72.5%), dysuria (33; 41.2%), malaise (22; 27.5%), chills (20; 25%) and hematuria, (19; 23,7%). No report rectal bleeding. 31 patients (2.3% of the patients) had diagnosis urinary tract infection. Among 26 positive cultures (6 blood cultures and 20 urocultures) all isolated E. coli. The sensitivity profile for the main antimicrobials: amikacin (26; 100%), nitrofurantoin (24; 92.3%), ceftriaxone (24; 92.3%), sufametoxazol-trimethoprim (17; 65.3%), cephalexin (15; 57.6%), ciprofloxacin (8: 30.7%).11 patients (0.8%) required hospitalization for treatment infectious disease. There was no report deaths related to the procedure or its complications. Conclusion: Ultrasound-guided prostate biopsy shall be considered a safe procedure. In our study, the incidence complications was 5.8%, and 2.3% met criteria for urinary tract infection.

[32]
Actions for prevention urinary tract infection in a home health care service.

PAULA GURGEL DA FONSECA; CARLA MORALES GUERRA; AMANDA APARECIDA DE OLIVEIRA VIEIRA; RONI DE PAIVA SANTOS

PRONEP ASSISTENCIA DOMICILIAR/HOSPITAL MUNICIPAL VEREADOR JOSE STOROPOLLI, SÃO PAULO, BRAZIL.

Introduction/objective: Intermittent catheterization (IC) is the first-choice procedure when the patient is unable to urinate spontaneously, because IC presents lower risk of urinary tract infection compared to the late vesical catheterization. Following the infection indicators, the infection control service identified an increase in the incidence of urinary tract infection in patients undergoing IC. The infection control service, then, performed a series of actions aiming to reduce the occurrence of urinary tract infection related to IC. Intervention: Through the Ishikawa diagram we identified factors that could be related to the increase of this rate: absence of a detailed protocol on the IC procedure, absence of training to the professionals and caregivers who performed the procedure and use of antiseptic degerming for intimate hygiene of the patient before the IC. It is reported that the use of antiseptic several times a day reduces the count of transitory and resident microorganisms, which have the function of protecting the mucosa against invading microorganisms. From this survey, the infection control service developed an IC protocol, performed the training of the multidisciplinary team and suspended the use of chlorhexidine degerming, instructing intimate hygiene only with water and neutral soap, as described in the literature. Result: One year after the interventions, we observed a significant reduction in the incidence of urinary tract infection related to IC. As a complement of these actions, an indicator of urinary tract infection related to IC was created, segregating it from the urinary tract general infection indicator, allowing a more individualized follow-up of the cases. Conclusions: Monitor the incidence of infections through indicators, apply quality tools to identify involved factors and adopt institutional protocols ensure safer care in home care

[33]
Strategy to assure the hand hygiene in home health care service.

PAULA GURGEL DA FONSECA; CARLA MORALES GUERRA; AMANDA APARECIDA DE OLIVEIRA VIEIRA; RONI DE PAIVA SANTOS

PRONEP ASSISTENCIA DOMICILIAR/HOSPITAL MUNICIPAL VEREADOR JOSE STOROPOLLI, SÃO PAULO, BRAZIL.

Introduction/Objective: the home health care service treat patient with an increasing clinical complexity, allowing patients with invasive devices to live comfortably in their homes receiving multidisciplinary care. Despite this complexity, there is still resistance from health care providers to pay for the necessary supplies to ensure hand hygiene. Considering that hand hygiene plays a key role in reducing the risk of infection, the infection control service of the home health care private company in São Paulo, evaluated the structure available in the homes of patients for hand hygiene in the five moments defined by the World Health Organization. Interventions: the infection control service developed a collection tool to evaluate the availability of necessary items for hand hygiene. Visiting nurses from the company were instructed by the infection control service to fill out this collection tool. Result: 169 households were evaluated. Ninety-three percent of the households presented sinks in an adequate location and in good conditions of use, according to the visiting nurses. Eighty-four percent of households provided liquid soap for professionals and caregivers, 14% provided bar soap and in 2% of the households there wasn't soap for hand hygiene. Referring to the materials for drying hands, 72% of households provided cloth towels, 25% provided paper towel and in 3% of households there wasn't material to dry hands. Conclusion: according to this evaluation and to ensure the safety of patients and professionals, the infection control service requested the supply of alcohol gel 70% to all the homes of patients in home health care.

[34]
Klebsiella pneumoniae carbapenem-resistant outbreak in the reality of an Brazilian public hospital

GIOVANNA BAPTISTA SAPIENZA; ROSANA RICHTMANN; ROBERTO MUNIZ JR

EMILIO RIBAS INSTITUTE OF INFECTIOUS DISEASES, SÃO PAULO, BRAZIL.

Introduction: Klebsiella pneumoniae carbapenem-resistant (CRKP) are endemic in many Brazilians hospitals, and are a major public health problem due to a great capacity to spread over patients in-hospital and the high mortality associated with infection or colonization. The Emilio Ribas Institute of Infectious Diseases (IIER) had reported their first CRKP case in 2014 which led to an ICU outbreak. Objective: To describe and analyze the impact of CRKP ointrodution in the intensive care unit (ICU) of IIER and evaluate the characteristics of patients involved in the outbreak. Methodology: A retrospective and observational study. Patients admitted in ICU to 2014 and 2015 with proven CRKP colonization or infection were included. Results: We identified 51 patients, 80.3% had the first positive sample for CRKP after 48 hours in the ICU. The mean of CRKP prevalence rates were 11 cases/1,000 patient-days. Control measures were implemented since the first case. The crude mortality was 60% and 33% had nosocomial infections by CRKP with mortality associated rate of 70%. The risk of death in the study patients was 2.7-fold higher (CI 1.2-5.9 p0.012) than the overall risk of death in the ICU in 2015. Most patients (84%) were HIV positive (mean of CD4=117 cells/mm3). The chance discharge alive was 5-fold higher in CRKP infected patients without HIV (OR 5, CI 1.8-13.7). The length of stay in ICU after colonization was 2.8 times higher (p0.028) in the group infected by the bacteria. Conclusion: Despite of the control measures implemented were adequate according to the literature, there was a spread of bacteria among ICU patients. The mortalities rates were higher than found in the literature and there was a higher risk of death in the study patients compared with the overall risk of death in the ICU in 2015, suggesting that the introduction of CRKP in the hospital had negative impact. There are no other studies that assess the CRKP in patients immunosuppressed by AIDS like this.

[35]
Adherence to aseptic technique and revision of the indication of the urinary catheter

MARILIA MELO DAMASCENO; MELISSA CHUEIRI MORAIS; MARA MARCIA MACHADO

IQG - HEALTH SERVICES ACCREDITATION, BRAZIL.

Introduction: Urinary tract infections (UTIs) represent 8% to 21% of all health associated infections (HAIs) occurring in intensive care units (ICUs). It is estimated that 80% of ICUs are related to the use of a urinary catheter, which are used in 16% to 25% of the patients at some point during hospitalization. Both monitoring and auditing should be part of the HAIs prevention and control programs, also feedback and dissemination of the data. Objective: This study describes the adherence rates to aseptic techniques in the insertion and daily revision of the indication of the urinary catheter in relation to the density of incidence of catheter associate urinary tract infection (CAUTI). Method: A descriptive study was performed based on the database obtained from 56 hospitals that voluntarily joined the Brazilian Patient Safety Program (PBSP). The data refers to the years 2014 to 2016, sent by hospitals as a percentage of adherence to aseptic technique in the insertion and daily review of the indication of the urinary catheter. Results: The rates of adherence to aseptic technique and daily review of the indication of the urinary catheter in the 2014-2016 triennium ranged from 92.59 to 94.52% and 89,99 to 88.89%, respectively. The incidence density of infection ranged from 5.23‰ to 4.28‰. Conclusion: The data reported by all hospitals, regarding CAUTI during the 2014 to 2016 triennium, have demonstrated a high adherence rate to aseptic technique and daily revision of the indication of use, with CAUTI density results compatible with data published internationally, showing that the CAUTI is controlled in services that adhered to the recommended practices of prevention and control of this infection.

[36]
Adherence to the clinical protocol for prevention of mechanical ventilator-associated pneumonia

MARILIA MELO DAMASCENO; MELISSA CHUEIRI MORAIS; MARA MARCIA MACHADO

IQG - HEALTH SERVICES ACCREDITATION, BRAZIL.

Introduction: Pulmonary infection in patients undergoing mechanical ventilation in the state of Sao Paulo reaches an incidence density of 10.63/thousand patients/day in ventilatory support. In the United States, 9 to 27% of patients undergoing mechanical ventilation develop pneumonia. By understanding that this condition in intensive care units (ICUs) presents high morbidity and mortality, Brazilian Patient Safety Program (PBSP) works with institutions that voluntarily joined to manage best practices in the prevention of this infection. Objective: This study describes the rates of adherence and effectiveness of the protocol for prevention of mechanical ventilator-associated pneumonia (VAP) and incidence density of VAP. Methods: A descriptive study was carried out by sending data from the best practices package by institutions that voluntarily joined the PBSP from 2015 to 2016. The 2015 data were sent from January by 111 institutions and ended in December with 135 registered and participative institutions. The 2016 year began with 135 registered and participative institutions, and ended with 160. Results: Adherence rates to guiding practices of clinical protocol of VAP in 2015-2016 were: head elevation at 45° angle (92.30-90.00%), daily ventilatory evaluation (83.13-84.81%), oral hygiene with chlorhexidine (89.31-87.88%), beginning of enteral nutrition at 24 to 48 hours of hospitalization in ICU (84.90-84.96%), maintenance of endotracheal tube cuff pressure between 25 and 30cm H2O (80.87-85.07%). The incidence density ranged from 8.2 to 7.45 and effectiveness of VAP protocol ranged from 94.60 to 96.33%. Conclusion: It was found that there was an improvement in incidence density and in the effectiveness rate in those two years, even with the challenges of adherence in some markers.

[37]
Adherence to the protocol for prevention of primary infection of the CLABSI

MARILIA MELO DAMASCENO; MELISSA CHUEIRI MORAIS; MARA MARCIA MACHADO

IQG - HEALTH SERVICES ACCREDITATION, BRAZIL.

Introduction: According to the World Health Organization, data provided in 2017, 12 to 25% of patients who acquire central line associated bloodstream infections evolves to death. It is estimated that, only in the United States, 80,000 cases are seen annually in intensive care units. These data demonstrate the importance of the implantation and evaluation of prevention measures of these health associated infections (HAIs). Objective: This study describes adherence rates to the protocols for the prevention of primary infection of the central line associated bloodstream infections (CLABSI) and the incidence density of CLABSI. Methods: A descriptive study based on the database obtained through information inserted by the institutions that voluntarily joined the Brazilian Patient Safety Program (PBSP). At the beginning of 2015, data were collected from 111 institutions and the number increased to 160 registered institutions by the end of 2016. Results: The adherence rates to the protocol for the prevention of central line associated bloodstream infections in 2015-2016 were: hands hygiene (95.62 – 96.37%), barrier precautions (95.53 – 96.67%), antisepsis with chlorhexidine (96.97 – 96.09%), selection of insertion site (87.80 – 91.44%), daily dressing monitoring (91.70 – 91.27%), daily indication of venous access (89.61 – 88.42%), daily connective tissue asepsis (89.44 – 87.47%). The infection density ranged from 2.97 to 2.70. Conclusion: The CLABSI data reported by hospitals in the years 2015 and 2016 demonstrated high adherence to best practices, with a comparable CLABSI density to data internationally published. Therefore, it is possible to conclude that institutions that followed the protocol for prevention of primary infection of the central line associated bloodstream infections control efficiently this HAI.

[38]
Signaling of multirresistent microorganisms in assistance management panel

ANGELA FIGUEIREDO SOLA; FABIANA SILVA VASQUES; YOLANDA COPPEN MARTIN;
REGINA MEDEIROS TRANCHESI; ANTONIO CARLOS PIGNATARI

HOSPITAL NOVE DE JULHO, SÃO PAULO, BRAZIL

Introduction: Health-care-related infections caused by multiresistant (MR) microorganisms in a patient increase hospitalization, morbidity, and hospital costs. The patient care team has available information about colonization or infection caused by these microorganisms. Objectives: To improve the communication in loco about the MR microorganisms to an assistance team, to avoid dissemination in the institution. Methods: Bacteria considered to be epidemiologically important were represented by colors. It was inserted a space in the electronic nursing management panel that shows what are the patients in isolation by MR microorganisms and what these agents are. The signaling is linked to the laboratory system and the HEPIC system to appear on the management panel. The patients that were previously hospitalized and diagnosed with MR microorganisms by the laboratory are also identified on the panel on the moment they return to the health-care institution. Results: MR microorganisms were represented by colors distributed as follows: green color for Acinetobacter baumannii resistant to cabapenemics, red for Pseudomonas aeruginosa resistant to cabapenemics, pink for Enterococcus spp resistant to vancomycin and blue as Klebsiella pneumoniae products of carbapenemases. When the patient is colonized or infected by bacteria described above, the bacterial-compatible color sign is demonstrated on the management panel, making it available to all professionals working in the unit with real-time updating. The HEPIC system signals the patients who rehospitalize and who already had a colonization by MR microorganisms, facilitating a management of the care team at the admission of the patient. Conclusion: real-time available information on the occurrence of MR microorganisms is important for professionals to be alert to the care of contact precautions. Also, the infection control professionals are more likely to observe a possible spread of bacteria in the unit.

[40]
Instituting olympiads for hand hygiene and infection prevention in a private hospital in São Paulo

MARCELLE GONCALVES DA ROCHA; JOAN PINTON TOMALERI; KAROLINE MELLO GAMA; RAISA BEATRICE MOURAO NOVO; DIANA HILDA TEIXEIRA FRANÇA; GLAUCIA FERNANDA VARKULJA

HOSPITAL SANTA CATARINA, SÃO PAULO, BRAZIL.

Introduction

In 2016 we had the olympic games based in Rio de Janeiro, the first edition of these in South America. Taking advantage of the "wave" of competition and union, the infection control team of hospital santa Catarina created the olympiad for hand hygiene and infection prevention, a mode in which everyone wins: employees, doctors and mainly patients. Interventions. The competition involved the nexus between hand hygiene and healthcare associated infection (HAI). The action, announced through various institutional media for team engagement, took place in the second half of the year. The results based on analysis of alcohol consumption (ml per patient-day) with units being ranked from highest to lowest consumption, earning points for this. From this value the amount of HAI was decreased (more points if bloodstream infection). The winning team of the month received a toten with a specially developed logo with the phrase: "This unit is the champion of the month in hand hygiene and infection prevention" which was exposed at the entrance of the sector.The great movement and provocation promoted by the action was the stealing of the toten from the champion unit of the previous month by the new champion team, always duly registered by the communication team, with widespread internal divulgation. The end of the olympics was marked by the recognition of the best performing team in a confraternization coffee with the hospital leadership. Results: The consumption of alcoholic product had an increase of 52% in its median (from 50ml to 76ml per patient-day). The HAI incidence density in the champion unit registered a fall of 43% comparing 1st and 2nd semesters. Conclusions: The action of the hand hygiene olympics allowed greater involvement of the teams by creating a climate of healthy competition and a search for win-win. Although it is not allowed to credit all the merit of the HAI decrease to the action, we can consider that the engagement contributed to this result.

[41]
Post cataract surgery endophthalmitis: results of seven years surveillance

REGINALDO ADALBERTO LUZ[1]; FLÁVIA SOTOLANI SILVA[2]; LINCOLN PEREIRA DA SILVA DALL'OGLIO[3]; TADEU CVINTAL[3]; WAGNER GHIRELLI[3]; MARIA CLARA PADOVEZE[4]

1.FACULDADE DE CIÊNCIAS MÉDICAS DA SANTA CASA DE SÃO PAULO; 2. BANCO DE OLHOS DE SOROCABA; 3. INSTITUTO DE OFTALMOLOGIA TADEU CVINTAL; 4. ESCOLA DE ENFERMAGEM DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Background: Postoperative Endophthalmitis (POE) is an infectious process, occurring mainly after cataract surgeries, often with unfavorable prognosis, evolving to a low visual acuity (LVA). Aim: To describe the incidence and epidemiological characteristics of POE after cataract surgeries in an outpatient ophthalmologic center. Methods: Descriptive longitudinal case series study including patients who underwent cataract surgery from 2008 to 2014. Cases were identified through infection surveillance system; characteristics of patients were collected by medical records review. Results: There was 35 cases of POE among 27,609 cataract surgeries. The cumulative incidence rate was 0.13% with annual variation from 0.04% to 0.27%. The onset of symptoms ranged from one to four days (mean: 7; SD: 8.3). As for the clinical presentation, more than 60% of the patients presented flare, corneal edema, hypopio, cells in the anterior chamber of the eye and LVA. Ocular pain was reported by 24 (68.6%) patients. Vitreous samples for microbiological culture were collected from 27 cases. Twelve (44.4%) Gram-positive microorganisms were identified, mostly coagulase-negative Staphylococcus; P. aeruginosa was identified in 5 (18.5%) cases. In 10 (37%) cases there was no microbial growth. Patients with suspected POE received intra-vitreous antibiotic injection for immediate treatment and 22 (62.9%) underwent posterior vitrectomy surgery. Regarding the final visual acuity, 26 (74.3%) of patients presented central vision efficiency equal to or less than 10%, which means visual impairment. Conclusion: POE after cataract surgery has low incidence and its clinical manifestation usually occurs within the first few days of post operatory. Infection control practitioners and nurses should play a role in the active search and follow-up of POE cases, development of preventive strategies, and patient education favoring early diagnosis and treatment.

[43]
New technologies to support the activities of the SCIH

LEONARDO FERREIRA DOS SANTOS[1]; EUNICE BOTELHO DE AMEIDA[2]

1.MV; 2.HBL

Introduction: The use of "Decision Support Systems" (DSS), in the context of the complexity of the environment of a health institution, especially a hospital, has become a fundamental requirement to guide the actions of professionals at different levels of patient care. Patient safety is compromised when using only manual notifications by raising the likelihood that adverse events will not be perceived near real time. Objectives: This study aims to evaluate the use of new technologies, through a computer system integrated with all areas of the hospital: reception of patients; clinical care; materials and logistics; revenues; financial and accounting and its impacts on the quality of patient care with the reflexes in all its surroundings. Methods: This descriptive study with a qualitative and comparative approach has used some of the interfaces that allow to leverage the tools available in IT: tablets, smartphones, touchscreen monitors etc, so as to support the use of Integrated Health Management System, functioning through the web, in "java flex" language. Results: The configurations of the computer system, according to the guidelines of the SCIH, allow the creation of rules (restrictive or educational) about each of the activities carried out by the multidisciplinary teams. The indicators or rates that are generated help to create evidence that allow corrective actions to be defined and goals to be achieved with high possibility of success. Conclusions: The adequacy to the quality standards established by the SCIH is measured and encourages the participation of all professionals that are involved, directly or indirectly, in patient care. Strategic decisions, at all levels, with the support of DSS, are carried out in accordance with best practices, with a high possibility of success.

[46]
Educational intervention with active methodology in prehospital care increases hand hygiene

ADENICIA CUSTODIO SILVA E SOUZA[1]; CLARICE CARVALHO DOS SANTOS[2]; MARIA APARECIDA DA SILVA VIEIRA[1]; MILCA SEVERINO PEREIRA[1]; ANACLARA FERREIRA VEIGA TIPPLE[3]

1.SCHOOL OF SOCIAL SCIENCES AND HEALTH, PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 2. COLLEGE UNION OF GOYAZES; 3. NURSING FACULTY OF FEDERAL UNIVERSITY OF GOIÁS, BRAZIL

Introduction: hand hygiene is an effective measure to prevent and control infections. However, the adherence to this measure is low, especially in emergency medical services due to the structural conditions. Aim: to evaluate the effectiveness of the educational action with the use of active methodologies to increase adherence to hands hygiene among prehospital care professionals. Method: a quasi-experimental, before-and-after study, performed in a prehospital emergency service of a municipality in the central-western region of Brazil. The study included nurses, nursing technicians, doctors and drivers who are also first responders. We included all those who participated in the educational intervention. The study took place in three phases: 1) pre-intervention data collection from January to March, 2016, through direct observation. The data were recorded on a checklist. 2) educational intervention carried out from June to July of 2016 with the use of the problematization methodology (Maguerez arch). 3) data collection three months after the educational intervention in October 2016, in the same way as in the first. Results: there was an increase in the adherence of the professionals to hand hygiene (p <0.001), measured three months after the educational intervention. Although hand hygiene adherence was statistically significant, it was not uniform at all times, with a higher adherence to hand hygiene after contact with body fluids (p <0.02); after contact with the patient (p <0.001) and environment (p <0.001). The educational intervention increased adherence to hand hygiene with soap and water, with alcohol gel (p <0.001) and with correct technique (p <0.01). There was an increase in alcohol consumption (p = 0.03). Conclusion: the problematization methodology showed to be effective in promoting hand hygiene adherence in prehospital care and should be a dynamic practice to address the new issues that have arisen in this process of learning and transforming reality.

[47]
Isolation precautions: experiences of hospitalized Brazilian patients

ROSELY MORALEZ DE FIQUEIREDO[1]; JOSÉLIA BATISTA DE JESUS[1]; ANA ANGÉLICA LIMA DIAS[2]; MARIA CLARA PADOVEZE

1.UNIVERSIDADDE FEDERAL DE SÃO CARLOS (UFSCAR); 2. UNIVERSIDADE FEDERAL DE SÃO JOÃO DEL REI; 3. UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Introduction: The implementation of specific isolation precautions aims to preventing the transmission of infections in Health Services. These, in turn, bring the inconvenience of using protective equipment, besides negatively interfering with the locomotion of patients and visitors. Aims: This study aims to investigate the perception, meanings and repercussion of being subject to specific isolation precaution, under the perspective of hospitalized patients, in the countryside of São Paulo state – Brazil. Methods: Qualitative clinical study which, making use of theoretical references of social vulnerability, intended to understand the meaning of being hospitalized under isolation precaution. Eighteen patients were interviewed and their statements were transcribed and analysing content according to themes. Results: This study to identify three thematic areas: established precaution, private room and stigma. In "Established Precaution" it was noticed a lack of information and a misunderstanding of the real reason for the precaution implementation. Under the aspect "Private Room", it was identified positive feelings – protection and the comfort of not having to share a room – and negative feelings – despair, anguish and boredom – for being confined to a room. Finally, in the "Stigma" aspect, it was observed embarrassment and fear for is isolated from other patients and family. Conclusion: Being hospitalized under specific isolation precautions, action extremely important to avoid cross infection, may cause suffering. Feelings like loneliness and embarrassment caused by the stigma of being isolated are mentioned as negative by the patients studied. On the other hand, the lack of understanding of the real reasons for the adoption of precaution is an obstacle to the participation of patients and their family members in the adoption of infection control measures. This study may orient actions of the Health Team aiming at minimizing the effects mentioned previously.

[48]
Correct use and handling of the white coat: extensive educational practices with health academics

MATEUS FRANCISCO FRANCISCO[1]; JÚLIA ALVES CORREIA SILVA[2]; ANACLARA FERREIRA VEIGA TIPPLE[2]; SILVANA LIMA VIEIRA DOS SANTOS[2]; DULCELENE SOUZA MELO[2]; ADENICIA CUSTODIO SILVA E SOUZA[3]; HELINY CARNEIRO CUNHA NEVES[2]

1.FACULDADE DE ENFERMAGEM- UFG; 2. NURSING FACULTY OF FEDERAL UNIVERSITY OF GOIÁS; 3. PROFESSOR OF SCHOOL OF SOCIAL SCIENCES AND HEALTH, PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: The white coat is a work garment used by academics and health workers during care delivery. Inappropriate practice regarding to the using and handling of this clothing suit its contamination characterizing it as a potential reservoir and vehicle for the dissemination of microorganisms. The professional training, has proved insufficient as to the teaching and practice of infection prevention and control measures. Aim: To report educational interventions that aim to encourage the correct using and handling of the white coat among health academics. Intervention: Through a university extension project (register number 253), in 2016, educational actions were developed with first and last year undergraduate students from nine Higher Education Institutions (HEIs) located in a municipality in the Midwest of Brazil, which covered 35 courses in the health area. With the consent of those responsible for the HEI and the teachers involved, discussions were held with a mean duration of 20 minutes, carried out in a group, in the classroom, on the importance of correct using and handling of the white coat in clinical practice. At the end an educational folder prepared by the team according to scientific evidence on recommendations of the using and handling of the white coat was delivered to each academic and a fixed information banner. Results: Many doubts were identified among the students about how to wash their white coats at home, to carry them and to exchange them. In addition, some academics didn't know that this clothing should not be used outside health services. Conclusion: It is concluded that educational actions of this nature are necessary, since those developed by the project have added information about current protocols on the using and handling of the white coat, and can initiate a critical reflection on this practice and influence im the adherence, safety and quality of care provided.

[49]
Post medical clearance surgical observation: is there an impact?

ANGELA FIGUEIREDO SOLA; FABIANA SILVA VASQUES; YOLANDA COPPEN MARTIN; REGINA MEDEIROS TRANCHESI; LETÍCIA TACHIBAMA OMENA; ANTONIO CARLOS PIGNATARI

HOSPITAL NOVE DE JULHO, SÃO PAULO, BRAZIL.

Introduction: Studies pointed out the efficiency in observational programs, associated with significant decrease on the account of surgical site infection (SSI). Post clearance observation inspects possible infections that were not detected during hospitalization. It is estimated that, on average, 47% of the SSI are diagnosed after medical clearance. This process allows to value the quality of care received by the patient . Objective: Evaluate the post surgery of the patients who have gone through laparoscopy, hip and knee arthroplasty, myocardium revascularization and peritoneal ventricular derivation. Method: Activities took place through telephone calls from a private hospital in the city of São Paulo, in the year of 2016. Evaluations occurred 30 days after the surgical procedures, followed by a second evaluation 90 days after. Patients who have undergone laparoscopic surgery were contacted by an administrative professional trained by the Hospital Infection Control team. Patients who have undergone hip and knee arthroplasty, myocardium revascularization and peritoneal ventricular derivation, telephone calls were carried out by the hospital infection control team nurses. Results: From the 9750 laparoscopic surgeries, 88.2% had a successful contact, which could identify 0.1% of SSI related to the surgical procedure. From the 142 hip and knee arthroplasties, 90.8% of patients were contacted and 0.7% of SSI were identified. From 17 myocardium revascularization procedures, 88.2% of patients had no infections detected. From the 54 peritoneal ventricular derivation performed, 87% of patients were successfully contacted and no infections were identified. Conclusion: Conducting post medical clearance surgical observation helps to track down possible cases of SSI, in which the patient does not need to get hospitalized in order to be treated. It also supports the evaluation of actions involved in a surgical procedure. Feedback can improve the safety of surgical patients.

[51]
Staphylococcus aureus colonization in illicit drug users, alcoholics and psychiatric inpatients

MAIRIS ALARCAO DUARTE DE OLIVEIRA SILVESTRE; MARINA BARBOSA; MARIA DE LOURDES RIBEIRO DE SOUZA DA CUNHA; NATHALIA BIBIANA TEIXEIRA; DANILO FLÁVIO MORAES RIBOLI; MATHEUS CRISTOVAM DE SOUZA; CARLOS MAGNO CASTELO BRANCO FORTALEZA

STATE UNIVERSITY OF SÃO PAULO (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Little is known on the epidemiology of *Staphylococcus aureus* and MRSA colonization in illicit drug users (IDUs) and/or alcoholics in setting where the use of injection drugs is rare. Patients admitted for short-term and long-term psychiatric care are also seldom studied in respect to *S. aureus* or MRSA. We conducted a study aimed at identifying the molecular epidemiology and predictors of colonization. METHODS: Subjects were recruited in two hospitals: (a) a reference hospital for the care of IDUs and alcoholics; (b) a psychiatric hospital. Nasal and oropharyngeal swabs were collected. Polymerase Chain Reaction was used to identify the *mecA gene* in MRSA, the chromosome cassette was (SCCmec) was characterized and strain-typing (Pulsed-Field Gel Electrophoresis) of MRSA isolates was performed. Poisson regression models were used for identification of predictors. RESULTS: We enrolled 138 subjects from the hospital for IDUs and alcoholics (Group A) and 82 from the psychiatric hospital (Group B). The prevalence rates for *S. aureus* / MRSA for both groups were 26.8% / 4.5% and 24.3% / 7.3%, respectively. Multivariable analysis identified inhaled cocaine as a predictor for *S. aureus* colonization in Group A (Prevalence Ratio [PR]=2.26; 95%Confidence Interval [CI]=1.02-5.00), while age was negatively associated with *S. aureus* in Group B. (PR=0.96; 95%=0.93-0.99). A single PFGE cluster grouped MRSA from 5 out of 10 subjects from both study groups. We identified isolates harboring SCCmec types 4 (7 subjects), I (2) and II (1). In conclusion, we found MRSA prevalence higher than identified in a population-based survey in the same are, with evidence of cross-transmission among subjects. Alcoholics, IDUs and psychiatric patients are at greater risk for MRSA infection and may play a role as spreaders of MRSA to the general population.

[53]
Integration of clinical laboratory test results with the infection control commission

LEONARDO ANTÔNIO FERREIRA DOS SANTOS

MV

Introduction: The support of the Laboratory of Clinical Analysis is, admittedly, quite relevant in the daily activities of the SCIH (Hospital Infection Control Service). Results of microbiology examinations and "biomarkers" are consulted within this context. Objectives: To present the importance of the "real time" communication of laboratory tests of culture type and biomarkers (PCR and Procalcitonin) as predictors of the epidemiological profile of hospital admission units and the clinical evolution of the patients. Methods: This is a descriptive study, with a qualitative and comparative approach of the reports obtained for the isolated microorganisms in hospitalization units of a hospital in the northeast of Brazil, through an integrated computer system between the SCIH and the Laboratory of Clinical Analysis. Results: The analyzed reports highlighted the "epidemiological profile" per hospitalization unit, allowing the investigation of the possible contribution of care professionals to patients in the presented scenario, along with other variables. PCR and Procalcitonin tests allowed, together with other actions, to assess whether the therapeutic course was consistent with the therapeutic plan. Conclusions: The information received by e-mail, through SMS and in the Monitor created for this purpose (Management at a Glance), enabled fast actions from the SCIH and the professionals directly related to patient care, potentiating corrective actions and mitigation of adverse events.

[58]
Outbreak of *Stenotrophomonas maltophilia* bloodstream infection in a hemodialysis unit

VERÔNICA FRANÇA ROCHA; THIAGO PEREIRA CAVALCANTI; THAISE DIAS SPINOLA; EUCLIMEIRE SILVA NEVES; LEDILCE ALMEIDA ATAIDE; ALLAN ROBERTO XAVIER MALHEIROS

ROBERTO SANTOS GENERAL HOSPITAL, STATE OF BAHIA, BRAZIL.

Introduction/aims: The Roberto Santos General Hospital, Salvador/Bahia, is a 600-bed public hospital. The hemodialysis service attends an average of 180 patients per month on the 4th floor of the Hospital. The hemodialysis water is also used in the intensive care unit located on the ground floor, connected by a 300-meter-long pipe. On December 2015, an outbreak of Stenotrophomonas maltophilia bloodstream infection was detected in patients on dialysis. This study aims to describe the actions carried out by the new hospital infection control team to address the issue. Interventions: During 8 months, 20 patients presented S. maltophilia bacteremia, 13 (65%) men and 7 (25%) women. 58.75 year was the median-age. The bacteria present in 19 patients were sensitive to Sulfamethoxazole-trimethoprim (mic ≤ 20 µg/ml) by Vitek 2. The microbiological control of the dialysis water was not satisfactory during the 6 months before the outbreak. The measures adopted to deal with the situation were: the cleaning frequency was intensified for once every 15 days; ozone water disinfection and ultraviolet water systems were installed; membranes and filters were changed. The hemodialysis pipes were replaced. Sulfamethoxazole-trimethoprim was added to the empiric antibiotic treatment during the outbreak until culture results. Results: Four (20%) patients died, two of which the infection was directly related. Recurrence was detected on six (30%) patients and 1 of those passed away. Since August 2016 until the April 2017 the dialytic water was within the parameters of normality and no further S. maltophilia cases were registered. Conclusions: Modifications in the hemodialysis service were achieved through a joint effort between managers, hospital Infection control and hemodialysis teams. Interventions may have prevented outbreak mortality from being even higher, as described in the literature for cases of S. maltophilia bacteremia.

[59]

Alcohol consumption for hand hygiene in a specialty outpatient clinic: in search of benchmarking.

SHIRLENY JESUS DE SOUSA; REGIA DAMOUS FONTENELE FEIJÓ

AMBULATÓRIO MÉDICO ESPECIALIZADO BARRADAS, SÃO PAULO, BRAZIL.

Introduction: Hand hygiene is a major challenge these days in care, both in hospitals and in the medical specialty outpatient clinic.The measurement of alcohol consumption is an indirect way of measuring hand hygiene adherence.Objective: To describe alcohol consumption for hand hygiene in the sectors of a public AME in the state of São Paulo in the period from 2012 to 2015. Methodology: Retrospective observational study to evaluate alcohol consumption for hand hygiene, from January/12 to December/15 with feedback to the responsible managers of the units, being: Surgical Center, Day Hospital, Endoscopy and SADT. In each sector, the total number of alcohol consumed in bags (liter) and the total denominator of attendances, examinations or surgeries/day of each sector were used to reach the indicator of consumption of alcohol in liter per 1000 consultations/examinations.Results:In the Surgical Center the consumption was 4.97L, 6.23L, 6.23L and 6.36L alcohol per 1000 surgeries/day, in the years of 2012,2013,2014 and 2015, respectively. In hospital-day the consumption was 5.21L, 6.47L, 6.05L and 5.60L in the four consecutive years.At endoscopy, the consumption was 5.95L, 16.54L, 7.88L and 8.84L alcohol per 1000 exams/day.And in the SADT sector it was 1.05L; 0.44L; 0.77L and 0.57L alcohol per 1000 tests/day in the evaluated years.It is noteworthy that the highest consumption was in Endoscopy and the lowest consumption was in the SADT, considering that there are also other ways for hand hygiene in sectors such as lavatory with soap and water. Conclusion:This study was built in four years so that the AME had a follow-up and a historical series of its actual consumption of alcoholic formulation for hand hygiene, since to date we have few references to this type of care. Another motivation to measure this consumption would also be to stimulate campaigns and trainings, giving return to the sectors of their consumption and improve hygiene adherence from the hands of the whole team

[60]
Action of detergents and disinfectants in traditional biofilm and buildup in the mbec model

CRISTIANA DA COSTA LUCIANO[1]; ANACLARA FERREIRA VEIGA TIPPLE[2]; NANCY OLSON[3]; MICHELLE ALFA[4]

1.PHD IN NURSING BY THE GRADUATE PROGRAM IN NURSING AT THE FEDERAL UNIVERSITY OF GOIÁS (FEN / UFG), GO; 2.FULL PROFESSOR OF THE GRADUATE PROGRAM IN NURSING, FEDERAL UNIVERSITY OF GOIÁS (FEN / UFG), GOIÂNIA,; 3.LABORATORY TECHNIQUE OF THE RESEARCH CENTER AND UNIVERSITY OF MANITOBA, WINNIPEG, CANADA; 4.INFECTOLOGIST, RESEARCHER AT THE RESEARCH CENTER AND UNIVERSITY OF MANITOBA, WINNIPEG, CANADA

Introduction: Flexible Gastrointestinal Endoscopes (FGE) are used for diagnostic and therapeutic, classified as semicritical which need to be submitted to high level Disinfection (HLD) processing. The FGE designs are complex, that contribute to the accumulation of organic matter in the surface of the internal channels of the endoscopes and to the formation of the biofilm. Objective: To develop a Biofilm Buildup (BBF) accumulation model, based on repeated test soil exposure, containing E. faecalis and P. aeruginosa by means of repeated cycles of fixation and to evaluate the ability of detergents and disinfectants to destroy and remove Bacteria in Biofilms Traditional (TBF) and buildup. Materials and methods: TBF was developed in MBEC™ peg, without hydroxyapatite, and BBF, with hydroxyapatite, over eight days. For the development of both biofilms, E. faecalis and P. aeruginosa, containing 8 log10, colony forming units per cubic centimeters (CFU/cm2) were used. Prolystica Enzimatic, Prolystica Neutro, Neodisher and Endozime were tested alone and in combination with Glutaraldehyde, Orthophthaldehyde and Hydrogen Peroxide Accelerator to determine if both biofilms could be removed. The removal of the TBF and BBF, using viable bacteria count, quantification of protein and carbohydrates and by scanning electron microscopy (SEM) was evaluated. Results: After eight days of BBF and TBF development and none of the detergents and disinfectants were able to remove the BBF and TBF. Only Prolystica enzimatic and Endozime removed both E. faecalis and P. aeruginosa in bacteria suspension. None of the detergent and combination tested removed > 1 log10 CFU/cm2 of the bacteria inside the TBF and BBF. Conclusion: The data indicate that if TBF and BBF accumulate in the FGE channels during repeated cycles of processing, neither the detergents nor the HDL will provide the expected level of their removal or bacterial destruction.

[61]
Evaluation of the quality of the cleaning and disinfection of surfaces in hospitals

TAMIRES MORAES LEITE DA SILVA[1]; ISABEL CRISTINA VILELA SOARES[2]; FERNANDA DE SOUZA SPADÃO[2]; TAIS GUIMARÃES[2]; HUGO LEONARDO MENDONÇA BASCUNAN[3]; INNEKE MARIE VAN DER HEIJDEN[3]

1.REDE D'OR SÃO LUIZ - UNIDADE BRASIL; 2. HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA USP; 3. LABORATÓRIO DE INVESTIGAÇÃO MÉDICA. SÃO PAULO, BRAZIL.

Background: To evaluate the quality of terminal room cleaning and compare the terminal cleaning process using water, soap and 70% alcohol versus quaternary ammonium fifth generation associated with polyhexamethylene biguanide (PHMB) in a surgical intensive care unit (ICU) at Hospital das Clínicas (São Paulo). Methods: The observational study was composed by terminals cleaning room and was performed in two stages, the first using water, soap and 70% alcohol and the second using quaternary ammonium fifth generation associated with PHMB. Data collection occurred from October 21 to December 16, 2013, through checklist items contemplating the responsibility of staff hygiene and nursing items, based on Standard Operating Procedure Terminal Cleaning Room of the institution. Microbiological samples were collected before and after terminal cleaning room with contact RODAC plate and seven swab surfaces: floor, wall, grid bed, infusion pump, bedside table, cardiac monitor and mattress. Results: 26 terminals cleanings room were evaluated, these average adequacy using water, soap and 70% alcohol by staff hygiene was 45 % and by nursing staff, 30 %. The average adequacy using quaternary ammonia product associated with PHMB, was 56 % by staff hygiene and 71 % by nursing staff. The largest proportion of reduction of colony forming units (CFU), occurred using quaternary ammonia associated with PHMB using statistical analysis(X^2) of 17,8 (5,9 -53,8), p<0,001. Statistical analysis revealed that when the process is suitable, regardless of the product used for reducing the number of CFU. Conclusion: The procedures examined did not meet the recommendations of institution and allow identify the need for an education program. Since the proportion of reduction in the number of CFU occurs when the procedure is adequate, regardless the use of disinfectant, a control and supervision of each stage of terminal cleaning room process is mandatory.

[62]
Investigation and hospital management of a community outbreak of acute diarrheal disease

TAMIRES MORAES LEITE DA SILVA; PATRICIA MARTINO LONGO; JÉSSICA LIETO CAMPOS; MARYLICE NAVAS PADILHA

REDE D'OR SÃO LUIZ - UNIDADE BRASIL. SÃO PAULO STATE, BRAZIL.

OBJECTIVE: To describe the early identification of an outbreak of acute diarrheal disease in a private school in the city of Santo André and the management of in-hospital cases. METHODS: Descriptive study, carried out in a pediatric unit of a private, tertiary-level hospital. The study sample consisted of the cases of patients diagnosed with acute diarrheal disease from the same private school in the city of Santo André from August 19 to 31, 2015. After attending to four cases by the Early Child Care, The Hospital Infection Control Service was notified and an outbreak situation was defined. Defined case suspect, measures to conduct the case, communication to the Epidemiological Surveillance in Health of the municipality and investigation of risk factors. RESULTS: 47 patients with acute diarrheal disease were diagnosed. The commonly identified symptoms were diarrhea, fever, abdominal pain and headache. 39 had hospitalization, all received empirical antibiotic therapy. In seven cases, complications such as hypovolemic shock, peritonitis requiring surgical intervention and sepsis occur, requiring ICU admission. The agent Shigella sonnei was isolated in coproculture from four cases. All preventive measures were established and there was inspection of the Sanitary and Epidemiological Surveillance at school, with samples of water, food and food handlers. The results of the water and food samples were negative and that of one of the manipulators was positive for the same microorganism, but the same symptoms started on the same date as the patients. CONCLUSION: The early identification of cases in the early childhood care and communication of the same to the SCIH collaborated to implement the measures of control and prevention of dissemination of microorganisms, standardization in care and identification of risk factors, communication with Epidemiological Surveillance and Sanitary Department of the Municipality that carried out intervention in the school

[63]

Effectiveness of the peripherally inserted central venous catheter in adult and pediatric patients

SÔNIA REGINA PERES EVANGELISTA DANTAS[1]; RENATA FAGNANI[1]; TIAGO CRISTIANO LIMA[1]; VANESSA ABREU SILVA[1]; MARIA OLÍMPIA CORREA PIMENTA AZEVEDO[1]; GISELLI CRISTINA VILLELA BUENO[1]; ANA PAULA GADANHOTO[1]; ANA PAULA MORAIS OLIVEIRA[2]; DIRCEU CARRARA[3]; ELIANE MOLINA PSALTIKIDIS[1]

1.HOSPITAL DE CLÍNICAS DA UNIVERSIDADE ESTADUAL DE CAMPINAS - UNICAMP; 2. BIBLIOTECA DA FACULDADE DE CIÊNCIAS MÉDICAS DA UNIVERSIDADE ESTADUAL DE CAMPINAS - UNICAMP; 3. INSTITUTO DO CORAÇÃO DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Objetives. This study aims to assess whether the use of the peripherally inserted central venous catheters (PICC) is more effective than the peripheral catheters and the centrally inserted central catheters to short permanence in adult and pediatric patients, for intravenous therapy greater than 14 days. Methods. The PICO tool was used. Outcomes: local/systemic infection, length of use, risks related to catheter placement and maintenance, costs and work process. Nine electronic databases were searched and manual search. The screening of studies, quality assessment, extraction and analysis were performed by two independent researchers. Results. 935 studies were identified, seven were included: three systematic reviews (two with meta-analysis), three randomized controlled trials and one cohort study. Most studies were published in 2013 (71,4%). Five studies compared the PICC to central venous catheter and two studies compared the PICC to peripheral venous catheter. The most analyzed outcomes were thrombosis and local and systemic infections by five studies. The PICC had longer permanence and lower healthcare demand compared to other catheters. Only one study showed significant difference in systemic infection. There was no significant difference in local infection.The main risk related to the maintenance of the PICC is venous thrombosis with a significant difference in three of the five analyzed studies. Conclusions. The PICC has specific indications that differ from those of short permanence peripheral or central catheters, being a more effective option for adult and pediatric patients who require intravenous therapy longer than 14 days, continuous or intermittent, in hospitals, outpatient and home care.

[64]
Evaluation of VAP bundle adherence in 10 intensive care units: knowing the results to improve care.

RAPHAELA SAMARTINS FONTINELE FRANCA; ISABEL CRISTINA VILELA SOARES OSHIRO; THAIS GUIMARAES; FERNANDA DE SOUZA SPADAO; ANA NATIELE DA SILVA BARROS; CLEIDE ROQUE DOS SANTOS; PATRICIA DANTAS DA SILVA REBELO; LAURA MARIA BRASILEIRO GOMES; ALEIA FAUSTINA CAMPOS; ADOLFO EDISON ILLANES; ICARO BOSZCZOWSKI; MARISTELA PINHEIRO FREIRE; MARIA LUISA DO NASCIMENTO MOURA; MATIAS CHIARASTELLI SALOMAO

HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Introduction: Ventilator-Associated Pneumonia (VAP) is an infectious complication that occurs after 48 hours of mechanical ventilation (MV) as a consequence of microaspiration. Several strategies of prevention for VAP are necessary due to the great risk of its acquisition and its morbimortality. Objective: Evaluating of adherence of VAP bundle in 10 ICUs. Methodology: prospective and descriptive study, held from July to September 2016 by direct observation of all patients submitted to MV the issues observed were: high headband, pressure cuff, prescription and performance of oral hygiene and upper airway aspiration. Results: A total of 282 observations were obtained and of these, 188 (66%) were not compliant. The headband elevation had only 2% of nonconformity, followed by oral hygiene prescription with 7%, cuff pressure with 18%, upper airway aspiration with 18%, and finally oral hygiene performance with 52% of non-compliance. Conclusion: The results of this studying demonstrate that the adherence to VAP bundle in general is low and that the item of greatest nonconformity is the annotation of oral hygiene. For really decrease the incidence of VAP is necessary the adherence of all items of the bundle. Efforts should be focused mainly on oral hygiene.

[65]

Epidemiology of colonization and infection by gram-positive microorganisms in newborns

THAIS ALVES BARBOSA; MARIA REGINA BENTLIN; ADRIANO MARTISON FERREIRA; FELIPE MORETTI CRUZ; LÍGIA MARIA ABRÃAO; JOÃO CÉSAR LYRA; LÍGIA MARIA SUPPO DE SOUZA RUGOLO; CAMILA SENA MARTINS DE SOUZA; ANA CLAUDIA MORO LIMA DOS SANTOS; MARIA DE LOURDES RIBEIRO DE SOUZA DA CUNHA

UNIVERSIDADE ESTADUAL PAULISTA (UNESP), BOTUCATU, SÃO PAULO STATE, BRAZIL.

introduction: the long stay in the Neonatal Intensive Care Unit represents one of the main risk factors for colonization and infection. objectives: to determine the incidence rates of colonization and infection by Gram-positive microorganisms and to analyze the clonal profile of microorganisms isolated from colonized and infected newborns. methodology: this is a prospective cohort study, including newborns born at the Hospital das Clinicas of Botucatu Medical School, in a one-year period. a total of 942 samples were collected weekly using sterile swabs from the nasal, anal and tracheal aspirate sites. the newborns were followed until the final outcome and other clinical materials were included in the study in the presence of infection. the microorganisms were isolated in Blood Agar, submitted to staining by the Gram method and biochemical tests for species differentiation. microbiological analysis also included genotypic identification and determination of the clonal profile by Pulsed-field Gel Electrophoresis (PFGE). results: 478 bacteria were identified at the species level, revealing 361 (75.5%) coagulase-negative staphylococci, 41 (8.6%) Staphylococcus aureus and 76 (15.9%) Enterococcus spp. a higher incidence of S. epidermidis colonization in the nasal mucosa (55.3%) could be observed. the analysis of the incidence in clinical materials revealed higher rates of S. epidermidis infection causing bloodstream infection with an incidence of 27.8%. the analysis of the clonal profile of S. epidermidis identified the presence of 2 clusters with similarity ≥80%. samples of S. aureus and E. faecalis also came from a single newborn showing the presence of identical samples at different sites. conclusion: evidence of identical lineages in different sites of the same newborn, proves that the colonization process represents a risk factor for infection. the presence of clones of S. epidermidis, indicates the importance of infection control.

[66]

Nosocomial outbreak due to kpc-producing, polymyxin-b resistant *K. pneumoniae* at a tertiary hospital

PRISCILA DE ARRUDA TRINDADE[1]; LILIANE SOUTO PACHECO[1]; ANA PAULA MARCHI[2]; ROBERTA CRISTINA RUEDAS MARTINS[2]; LAURO VIEIRA PERDIGÃO NETO[2]; VIVIANE DRESCHER SOMAVILA[1]; CAROLINE ZOTTELE[1]; ROSELENE ALVES RIGHI[1]; LUIS JUNIOR FINATTO[1]; MARLI MATIKO ANRAKU DE CAMPOS[1]; ALEXANDRE VARGAS SCHWARZBOLD[1]; ANNA SARA LEVIN[2]; SILVIA FIGUEIREDO COSTA[2]

1.UNIVERSIDADE FEDERAL DE SANTA MARIA; 2. UNIVERSIDADE DE SÃO PAULO, BRAZIL.

At our hospital, we experienced an increase in the incidence of infections caused by carbapenem-resistant *Klebsiella pneumoniae* since its first isolation in 2013. An outbreak caused by polymyxin B and KPC-producing *K. pneumoniae* occurred during August, 2016. The aim of this study was to describe the outbreak, characterize the clonal diversity and molecular mechanisms of resistance in the isolates. Bacterial isolates were collected from clinical samples or surveillance cultures. Medical records of the patients were retrospectively reviewed. Species identification and antimicrobial susceptibility testing were carried out on the Vitek®2 system. Multiplex PCR was used to detect bla_{KPC}, bla_{OXA-48} and bla_{NDM}. PCR for *mcr-1* gene was performed. Clonal relationship between the isolates was evaluated by PFGE. WGS was carried out using Miseq IlluminaTM. Moreover, environmental-surface cultures were performed and hand hygiene compliance rate (HICR) was evaluated. The microorganisms were isolated from twenty-two patients, of whom three were infection whereas the others were colonized. All isolates were positive for bla_{KPC}. Other carbapenemase genes investigated were not detected as well as the *mcr-1* gene. Analysis of PFGE profiles identified the predominance of a single profile. Resistance profile showed the presence of bla_{KPC-2}, bla_{CTXM-2}, bla_{OXA-2}, bla_{SHV-11} and bla_{TEM-1B} genes. In addition, genes *aac(3)-IIa*, *aacA4*, *aac(6')Ib-cr*, *oqxA*; *oqxB*, *fosA*, *catA1*, *sul1* and *dfrA30* were found. Chromosome mutations on *pmrB*, *eptA*, *phoQ*, *mgrB*, *lpxM* and *yicM* probably were the cause of polymyxin B resistance. Environmental-surface cultures were all negative for carbapenem-resistant K. pneumoniae. HICR was 46%. According to PFGE a single clone caused the outbreak. Resistance to polymyxin was due to chromosome mutations. No environmental source was identified and no correlation with the variation of antimicrobial consumption was found. The outbreak was probably related to the low HICR.

[67]
Epidemiology of colonization and infection by gram-negative microorganisms in newborns

THAIS ALVES BARBOSA; MARIA REGINA BENTLIN; ADRIANO MARTISON FERREIRA; FELIPE MORETTI CRUZ; LÍGIA MARIA ABRAÃO; JOÃO CÉSAR LYRA; LÍGIA MARIA SUPPO DE SOUZA RUGOLO; DANILO FLÁVIO MORAES RIBOLI; ANA CLAUDIA MORO LIMA DOS SANTOS; MARIA DE LOURDES RIBEIRO DE SOUZA DA CUNHA

UNIVERSIDADE ESTADUAL PAULISTA (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction: newborns undergoing intensive care have increased predisposition to infection after colonization. objectives: to determine the incidence rates of colonization and infection by Gram-negative microorganisms and to analyze the clonal profile of microorganisms isolated from colonized and infected newborns. Methodology: this is a prospective cohort study, including newborns born at the Hospital das Clinicas of Botucatu Medical School, from November 2013 to November 2014. a total of 600 samples were collected weekly by sterile swabs from the nasal, anal and tracheal aspirate sites. the newborns were followed until the final outcome and other clinical materials were included in the study in the presence of infection. samples were isolated in MacConkey Agar, submitted to staining by the Gram method, followed by a series of traditional identification tests. microbiological analysis also included the determination of the clonal profile by Pulsed-field Gel Electrophoresis (PFGE). Results: 548 (91.3%) Gram-negative bacilli (BGN) glucose fermenters and 51 (8.5%) non-fermenting BGN were obtained. of these, 336 were submitted to the identification process at the species level. Gram-negative bacteria had a high incidence of colonization, especially in the anal mucosa and, mainly, Serratia marcescens (26.8%). Klebsiella spp. were those with the highest incidence of infection (16.7%). The analysis of the clonal profile of Serratia marcescens allowed the identification of a cluster, where the isolates come from a single newborn, evidencing the presence of identical samples in different sites. Conclusion: the presence of microorganisms with identical strains in different sites evidences that the colonization process represents a risk factor for infection, being fundamental the control of the propagation of these clones due to their negative impact on the survival of neonates.

[68]
Chlorhexidine and mupirocin susceptibility profile in MRSA clinical isolates

TANIELA MARLI BES[1]; LAURO PERDIGÃO[1]; ROBERTA RUEDAS MARTINS[2]; INNEKE HEIJDEN[2]; PRISCILA TRINDADE[2]; DIEGO MONGELOS[2]; MARIAMA TOMAZ[2]; LARISSA MARQUES DE OLIVEIRA[2]; FLAVIA ROSSI[1]; ANNA SARA LEVIN[1]; SILVIA FIGUEIREDO COSTA[1]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO; 2. INSTITUTO DE MEDICINA TROPICAL – UNIVERSIDADE DE SÃO PAULO (USP), BRAZIL.

Background: Chlorhexidine has been extensively used in hospital setting, while mupirocin is used to eliminate MRSA nasal carriage. Despite the widespread use of them, the in vitro action against Methicillin-resistant Staphylococcus aureus (MRSA) is still poorly studied. Objective: Describe susceptibility of chlorhexidine and mupirocin in MRSA clinical isolates by whole genome sequencing (WGS). Material/methods: MRSA clinical strains from Hospital das Clinicas, Sao Paulo, Brazil isolated from 2002/2003 and 2012/2013 were studied. Microdilution susceptibility testing for the following antibiotics: clindamycin, erythromycin, vancomycin, TMP/SMX and ciprofloxacin were performed. D-test and susceptibility to mupirocin were performed by disk diffusion and chlorhexidine susceptibility by agar dilution. PCR for virulence, mecA gene and SCCmec types of all isolates were done and WGS of mupirocin and chlorhexidine resistant strains using Illumina☐. Results: 216 MRSA clinical strains were evaluated: 154 from infected and 62 from colonized patients. 58% of the isolates were resistant for TMP/SMX. The most frequent SCCmec type were 63% type III, 17% type IV and 13% type II. Forty-seven (22%) MRSA isolates showed MICs for chlorhexidine≥4.0μg/ml, and only one isolate was resistant (MIC of 8.0μg/ml). Mupirocin resistance was observed in 4strains. Efflux pump was present in most of isolates, however, only the isolate with high chlorhexidine MIC presented the qacA gene and mupA was the only resistant gene identified in mupirocin resistant strains. Conclusion: Chlorhexidine resistance is rare in our hospital and SCCmec type III was the most frequent type. *mup*A is plasmid mediated warning for the potential of spread of mupirocin resistance in our hospital.

[69]
Prospective assessment of prevention measures for the urinary tract infection

ANNA MARIA KAMIMURA DOS SANTOS; DIRCEU CARRARA; TÂNIA MARA VAREJÃO STRABELLI

HEART INSTITUTE, SCHOOL OF MEDICINE, UNIVERSITY OF SÃO PAULO, BRAZIL.

Introduction: Urinary tract infection (UTI) is an important health problem that affects both sexes and different age groups and in about 75% of the cases, is associated with urinary catheters. The increase in the density of incidence of UTI identified in the clinic intensive care unit of the Heart Institute, school of medicine, University of São Paulo and the need to adopt effective measures of prevention of this infection motivated the development of this study. Objective: To evaluate the non-conformities related to the UTI prevention. Method: Intervention study, longitudinal and prospective that had the finality to reduce the number of non-conformities related to the UTI associated with indwelling urinary catheters (IUC) prevention. It was executed in five steps. In the first was evaluated the existence of non-conformities. In the second has occurred the proposed intervention. Third, fourth and fifth steps occurred 30, 60 and 90 days after the intervention and were similar to the first. The intervention consisted of a "puzzle", in which the participants were tested as the maintenance of the IUC, followed by the delivery of an explanatory folder. Results: Of the responses provided by the 66 members of the nursing staff to the "puzzle", there was 12,1% of non-conformities related to the urinary meatus hygiene and 4,5% related to the fixation of the IUC. From the 195 observations carried out, the non-compliance more frequent was the fixing of the IUC (48,2%), followed by urinary meatus hygiene (13,3%) and the record date of the IUC installation (5,1%). Conclusion: The intervention highlighted the main questions regarding the installation and handling of the IUC, led to the re-orientation as the correct measures and indicated the points that must be frequently reminded in the future. We suggest the adoption of strategies in order to ensure that the information provided would not be lost in time, and that low levels of non-conformities remain.

[71]
Time trends of device-associated infection in critically ill adults: a joinpoint regression analysis

GABRIEL BERG DE ALMEIDA; RICARDO DE SOUZA CAVALCANTE; ELAINE SILVA DE FREITAS; DAGMAR APARECIDA EBURNEO RIPOLI; SANDRA MARA QUEIROZ; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, SÃO PAULO STATE UNIVERSITY (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: The effectiveness of infection control cannot be appropriately analysed with classical comparison of before-and-after rates. Time series analysis using joinpoint regression can estimate both long-term trends and inflection points ("joinponts") associated with interventions. Our study aimed at applying this analysis to 9-year trends of device-associated infections in critically ill patients. METHODS: The study was conducted in two Intensive Care Units (ICUs, 24 total beds) for medical-surgical adult patients in the teaching hospital from Botucatu School of Medicine (Botucatu, São Paulo State, Brazil). Monthly rates for device associated infection in the period of 2007-2016 were submitted to joinpoint regression analysis using Joinpoint 4.4 (National Cancer Institute, Calverton, MD, USA). RESULTS: During the study period, we found 2 joinpoints for ventilator-associated pneumonia (VAP; Jun/2010 and Oct/2010; $P<0.001$). There was a progressive reduction in rates, with monthly estimates (Beta) of -0.62 for Jan/2007-May/2010, -18.8 for Jun/2010-Oct/2010 and -0.49 for Oct/2010-Dec/2016. The most abrupt inflection corresponds to the introduction of a bundle for VAP prevention. Additionally, we found three joinpoints for central line-associated bloodstream infections (CLABSI; Jun/2007; Jun/2009; Jun/2010; $P<0.001$) and two joinpoints for catheter-associated urinary tract infections (CAUTI; Oct/2009 and Feb/2010; $P=0.02$). Those points were not associated with specific infection control interventions. CONCLUSIONS: Joinpoint analysis allowed us to identify instances of modifications in time trends. While an abrupt reduction in VAP rates was associated with a bundle intervention, further analysis is required to identify determinants of changes in time trends for CLABSI and CAUTI.

[72]

Is the empiric therapy with gentamicin proper for gram-negative bacteremia in hemodialysis subjects?

MARIANA ABOU MOURAD FERREIRA; LOUISE MODENESI CORTI; MARIA LUIZA SCARDUA PEREIRA; KENIA VALERIA SANTOS

UNIVERSIDADE FEDERAL DO ESPÍRITO SANTO (FEDERAL UNIVERSITY OF ESPÍRITO SANTO), BRAZIL.

Introduction/objective: In Brazil, the most widely used renal replacement therapy is hemodialysis, although it has a high risk of bacteremia. These infections are caused by gram-positive or gram-negative bacteria in similar proportions, therefore the empirical antimicrobial therapy usually consists in using vancomycin plus gentamicin against gram-positive and gram-negative, respectively. In this regard, we aim to verify if this empiric therapy covers gram-negative bacilli isolated from bacteremia of patients undergoing hemodialysis, based on their microbiological profiles and antimicrobial susceptibility. Methods: From November 2013 to November 2014, we received 117 bacterial samples from true bacteremia from three dialysis clinics located in Espírito Santo, Brazil. Of these samples, 55 (47%) were gram-negative bacilli (GNB).We identified GNB for genus and species through identification kits. Antimicrobial susceptibility tests were performed by disc diffusion and microdilution method according to the CLSI. Results: Among GNB isolates, 39 (71%) were fermenting (FGNB) and 16 (29%) were nonfermenting (NFGNB). *Klebsiella* spp. and *Stenotrophomonas maltophilia* were the most frequent GNB identified, each one corresponding to 20% of the total. Slightly more than half (60%) of the GNB were resistant or intermediate to at least one antimicrobial. The FGNB strains showed the highest resistance and intermediate profile when compared to NFGNB. Resistance to gentamicin was found in 15% of the FGNB, half of which were *Klebsiella* spp, while *S. maltophilia* is intrinsically resistant. Conclusions: The empiric antimicrobial therapy against GNB adopted in the dialysis clinics of this study seems inappropriate since gentamicin does not cover *S. maltophilia*, responsible for 20% of bacteremia by GNB. Financial support: FAPES.

[74]
Reduction of acquired infections of health in a icu at a large hospital of São Paulo.

JOAN PINTON PINTON TOMALERI[1]; ADRIANA REGINA FERREIRA DE ASSIS[2]; ELEN SILVEIRA YAGINUMA[2]; ALINE CRISTINA TRESCENTTI[1]; KARINA DO CARMO SANTOS[2]

ASSOCIAÇÃO CONGREGAÇÃO DE SANTA CATARINA; HOSPITAL SANTA CATARINA, SÃO PAULO, BRAZIL.

Introduction / Objectives: It's an individual's right receive a quality health care and health services should provide care being effective, efficient, safe, and ensures patient satisfaction in whole process. Among the major concern about patient safety is to reduced risk of incident Healthcare-associated infections (HAI). HAIs are considered a major public health problem worldwide, because of the significant risk to users of health services, especially in hospital settings. The objective was to reduce suffering by reducing device associated infections / related to invasive devices (Catheter-Associated Urinary Tract Infection (CAUTI), Central Line-associated Bloodstream Infection (CLABSI), Ventilator-associated Pneumonia (VAP)), 100% of prevention bundles adherence at Cardiologic Adult Care ICU with 16 beds, from July 2015 to March 2017. Methods: Application of Improvement Science Methodology, build by driver diagram and PDSA (plan-do-study-act) cycle. Results: The results showed positive impact at heath assistance, with reduction in infections: CAUTI, CLABSI and VAP higher than the initial objective proposed by the project. The medians at the beginning of the CAUTI, CLABSI and VAP topographies project was 0.98; 4.8; 7.34; until this month (March 2017) all topographies obtained median of zero. Conclusions: It can be concluded that the engagement of the team with a methodology of work can provide a qualified assistance. Through the improvement science, process was changed, the team changed their mental models as a priority as quality and patient safety and all that was essential for the reduction of Healthcare-associated infections.

[75]
Vancomycin subtherapeutic levels modify biofilm formation and *Staphylococcus aureus* susceptibility

JÉSSICA DE CÁSSIA TEIXEIRA BIRRO; INDIAMARA DOS SANTOS MATEUS; KÊNIA VALÉRIA SANTOS

UNIVERSIDADE FEDERAL DO ESPÍRITO SANTO, BRAZIL.

Introduction/Objectives: Catheters are significant vascular accesses in hemodialysis (HD) patients as a major risk factor for bacteremias. Bloodstream infections are treated empirically with vancomycin (van) when catheters are colonized by biofilm-producing bacterias, specially *Staphylococcus aureus*. If therapeutic levels are not achieved in HD patients, it may generate resistant clones and change virulence capacity and, consequently results treatment failure. The purpose of this study was to investigate if the van subtherapeutic levels, founded in HD patients, modify biofilm formation and *S. aureus* susceptibility in this drug. Methods: Seventy-five strains of *S. aureus*, bloodstream and nasal carriers of HD patients, were recovered and tested for biofilm production through a polystyrene microplates and as well as van susceptibility through a minimal inhibitory concentration (MIC) test. Then, biofilm-producing strains were regrowth for 5 consecutive days in Müller-Hinton agar supplemented a van gradient concentration (0 a 10 μg/mL), simulating a break dosage and the lower van subtherapeutic levels related to HD patients. After the 5th day, cultures were revaluated for biofilm formation and MIC. Results: Forty-five strains (60%) of biofilm producers were classified as weak (73%), moderate (11%) and strong (13%). Significant differences were observed in the van treatment, biofilm formation was modified in 54% of samples (N=14), with some samples increasing (N=8) and others decreasing production (N=6) ($p < 0,05$). There was also a change in MIC from $\leq 0,5$ μg/mL to ≥ 1 μg/mL in majority of van exposure samples. Conclusion: *S. aureus* exposure to van subtherapeutic levels over 5 consecutive days modified biofilm formation in the most of samples tested and generated a MIC increment of this drug that could compromised its clinical efficacy. Support: FAPES, CNPq.

[76]

Monitoring the effectiveness of automated equipment in cleaning of medical device: what to consider?

MARIA LETICIA DE MIRANDA MATI; ADRIANA CRISTINA DE OLIVEIRA

FEDERAL UNIVERSITY OF MINAS GERAIS, BRAZIL.

Improper cleaning can compromise the processing of medical devices. The Resolution of the Collegiate Board of the National Sanitary Surveillance Agency number 15, March 2012 recommends using ultrasonic washing machines in automated cleaning. However, it does not provide guidance on cleaning and validating this equipment. The objective of this study was to identify studies that address parameters for monitoring the effectiveness of medical devices cleaning in automated equipment in a Sterilized Material Central. It was an integrative review of publications available from Scientific Electronic Library Online, Science Direct, Scopus, Web of Science and Pubmed, from 2000 to 2017 and from associations, industry, and government agencies. Seventeen productions were identified. The evaluation of the effectiveness of the ultrasonic washer included two categories: validation of equipment operation through periodic testing, inspection and cleaning of filters, preventive maintenance, verification of calibration of ultrasonic washing machine functions and chemical tests or aluminum foil testing, which verify the ultrasonic activity of the equipment; And validation of the cleaning performed by the equipment through daily visual inspection, weekly tests of protein residues that verify the cleaning of the medical devices (Soil Test®) and water quality monitoring by evaluating the hardness, pH and temperature.

[77]
Fungal analysis of biological filters of CO2 incubator

ADRIANA SIERRA ASSENCIO ALMEIDA BARBOSA[1]; GIOVANA SOLER CAROLINO[2]; NASSARA A. H. PEREIRA[2]; MÔNICA SILVEIRA[3]; SÔNIA MARIA USÓ RUIZ SILVA[4]; FÁTIMA REGINA VILANI-MORENO2[4]

1.LAURO DE SOUZA LIMA INSTITUTE AND FACULTY OF TECHNOLOGY OF BAURU; 2. FACULTY OF TECHNOLOGY OF BAURU; 3. STATE HOSPITAL OF BAURU; 4. LAURO DE SOUZA LIMA INSTITUTE. BAURU, SÃO PAULO STATE, BRAZIL.

Introduction / aims: Fungal infections have become a growing problem of public health, worldwide, constituting an increasing cause of morbidity and mortality. Considering that CO2 incubators are used in studies involving the cultivation of different cell types and that cell therapy has been an alternative in health care, the objective of this study was to evaluate the incidence of fungi in biological filters of CO2 incubator. Methods: After removal of 4 biological filters from the CO2 incubator (Thermo Scientific, Model 3100, with Water Jacket) they were sectioned and seeded in Petri plates containing culture medium Dextrose Sabouraud Agar (Difco®). Plates were incubated at 25°C and 37°C for 5 days and 24 hours, respectively. Another part of the filters was immersed in Brain Infusion Heart (BHI-Difco®) broth and incubated at 37°C for 48 hours; then the suspension was seeded in Dextrose Sabouraud Agar. Identification of fungi was performed based on their macroscopic and microscopic aspects. The differentiation of Candida spp. was carried out in culture medium CHROMagar Candida (Difco®). Results: Fungal growth was observed in 100% of the biological filters analyzed and the presence of 8 fungal species with the following frequency: Aspergillus fumigatus (100%), Aspergillus niger (75%), Candida albicans (50%), Candida tropicalis (100%), Fusarium spp. (50%), Mycelia sterilia (75%), Neurospora crassa (50%) and Penicillium spp. The filter I presented 7 fungal species, the filters II, III and IV presented 5 species each. Conclusions: It was concluded that it was possible to verify the presence of pathogenic and opportunistic fungi in the biological filters analyzed, proven through fungal growth. The fungi Aspergillus fumigatus and Candida tropicalis were found in all filters. In this way, the biological filters were excellent physical barriers in the CO2 incubator, avoiding the contamination of the cell cultures and preventing possible healthcare-associated infections.

[78]
Efficacy of ethyl alcohol and quaternary ammonium in hospital medical equipment disinfection

ADRIANA SIERRA ASSENCIO ALMEIDA BARBOSA[1]; GLEICE DOS SANTOS CARNEIRO[2]; LARISSA FERNANDEZ REPULLIO[2]; NASSARA A. H. PEREIRA[2]; MÔNICA SILVEIRA[3]; SÔNIA MARIA USÓ RUIZ SILVA[4]; FÁTIMA REGINA VILANI-MORENO[4]

LAURO DE SOUZA LIMA INSTITUTE AND FACULTY OF TECHNOLOGY OF BAURU; 2. FACULTY OF TECHNOLOGY OF BAURU; 3. STATE HOSPITAL OF BAURU; 4. LAURO DE SOUZA LIMA INSTITUTE. BAURU, SÃO PAULO STATE, BRAZIL.

Introduction / aims: Hospital environments can to host pathogenic and opportunistic microorganisms, and the cleaning and disinfection process is essential for prevention and control of healthcare-associated infections. The objective of this study was to compare the efficacy of ethyl alcohol and quaternary ammonium in the disinfection of hospital medical equipment against Staphylococcus aureus (S. aureus). Methods: The method used in the study was the decontamination of 10 hospital medical equipment classified as semi-critical and non-critical contaminated with a suspension of 1.5×10^8 Colony Forming Units (CFU) / ml of S. aureus ATCC 25923 (in 0.9% saline solution, 0.5 dilution of the McFarland standard from Probac Brazil). The decontamination occurred with ethyl alcohol at concentrations of 46.2%, 70% and 99% and with the quaternary ammonium of 1st generation and 5th generation. After decontamination, swab samples were collected from the surface of the equipment and immersed in Brain Infusion Heart (BHI-Difco®) broth and incubated at 37°C for 24 hours; then the suspension was seeded in DNAse (Difco®) incubated at 37°C for 24 and 48 hours. Results: The results showed a growth of S. aureus in 80% (8) of hospital medical equipment decontaminated with alcohol 46.2% and 99% (mean of 5.5 ± 4.10 and of 3.2 ± 3.08 CFU / plate, respectively). The results of the cultures after decontamination with 70% alcohol and quaternary ammonium of 1st and 5th generation revealed that there was no bacterial growth on the surface of all equipment tested. Conclusions: It was concluded that the disinfection processes with alcohol 70% and quaternary ammonium 1st and 5th generation were effective in the control of S. aureus, proving the effectiveness of these products in the disinfection of hospital medical equipment. On the other hand, alcohol 46.2% and 99% were inefficient in decontamination indicating that these concentrations are not recommended in the hospital environment.

[79]
Oral hygiene with odontology in icu: important strategy for less ventilation associated pneumonia

CLAUDIA M. DANTAS DE MAIO CARRILHO; ELISA EMI TANAKA; EVELISE ONO; FERNANDA NAKANISHI ITO; GILSELENA KERBAUY LOPES; ANDREIA BENDINE GASTALDI; MARIA BEATRIZ BERGONCE PEDRIALLI; ALINE FRANCO ROCHA; PRISCILA PAGANINI TIOSSI; ADEMAR TAKAHAMA JUNIOR; FABIO ITO

UNIVERSIDADE ESTADUAL DE LONDRINA, STATE OF PARANÁ, BRAZIL.

Introduction / objectives: Pneumonia associated with mechanical ventilation (VAP) is the most frequent complication and greater morbidity in ventilated patients. Countless efforts are being made to prevent this infection. Oral hygiene consists of the package of preventive measures of VAP and more recent, the presence of the dentist in the ICU, in multiprofessional activity, can collaborate with the reduction of this infection in the ICU. The objective of this study is to report the experience of a multiprofessional project between nurses, dentists and physicians in a medical-surgical ICU of a teaching hospital and the impact on the density of incidence (DI) of VAP. Intervention: In March 2016, an extension project was started in the adult ICU of the University Hospital. The team is comprised of dentists, nurses and residents of both areas under medical supervision. On a daily basis, the team approaches the patients in mechanical ventilation who have no contraindication, in 45 degrees decubitus, and develop the following: cavity inspection, chlorhexidine brushing 0.12% (Bass technique), aspiration and lip hydration. We present the density of incidence of VAP data before and after the introduction of the new routine, comparing similar periods. Results: Between March and October of 2015, there were 61 VAPs in the ICU. In the same period, in 2016, with the introduction of the new routine, 50 VAPs occurred. The density of incidence of VAP was 36.9 VAP / 1000 resp- day and 29.3 VAP / 1000 resp- day after the intervention. Conclusions: There was a reduction in the number of VAPs, ICU professionals and family members recognize the importance of the dentist in the unit and such procedure should be routine in the ICUs in order to guarantee better oral health of the patients.

[80]
Interventions to improve adherence to guidelines on 'standard precautions'

RAFAELA APARECIDA PRATA[1]; REGINA EL DIB[1]; DONNA MORALEJO[2]; PASQUAL BARRETTI[1]; IONE CORRÊA[1]

1.UNIVERSIDADE ESTADUAL PAULISTA (UNESP), BOTUCATU, SÃO PAULO STATE, BRAZIL; 2. SCHOOL OF NURSING, MEMORIAL UNIVERSITY, ST. JOHN'S.

Introduction: It is estimated that more than four million patients in Europe and 1.7 million in the United States develop a healthcare-associated infection (HAI) each year, with a higher prevalence and mortality in developing countries. Standard Precautions disrupt transmission and can reduce HAIs. Objective: To assess the effectiveness of interventions which target healthcare professionals to improve adherence to Standard Precautions (SP) in patient care. Methods: Systematic review of randomized and non-randomizedcontrolled trials, time series and controlled before and after studies. Results and discussion: The review authors found 9 relevant studies with a total of 723 participants. Three studies were from Asia, three from Europe, two from North America and one from Australia. Educational strategies were compared to no intervention in six studies and to education plus additional infection control support in two studies. One study compared technical interventions with no intervention. All of the studies were considered to be at high risk of bias with different sources of risk. Because of heterogeneity in interventions and outcome measures, only two studies could be combined for a meta-analysis related to adherence. Observed adherence to Standard Precautions was higher in those receiving education compared to no intervention (MD 11.42, 95% CI 1.93 to 20.92); two studies (n=151); low quality evidence). There was also a difference favouring educational strategy compared to no intervention in terms of improved knowledge (MD 1.57, 95% CI 1.01 to 2.13; one study (n=98); very low quality evidence) and increased self-reported behavior related to infection control precautions (MD 6.23, 95% CI 4.30 to 8.15); one study (n=98); very low quality evidence). Conclusions: Educational intervention may improve adherence to Standard Precautions. It is uncertain whether educational intervention improves knowledge and self-reported behaviour.

[82]
Meteorological determinants of bloodstream infections in patients attending a hemodialysis clinic.

FELIPE AUGUSTO DE LUCENA OLIVEIRA; DANIELA PONCE; RICARDO DE SOUZA CAVALCANTE; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Recent reports suggest seasonality and meteorological influence on the incidence of Healthcare-Associated Infections (HCAIs). We conducted an ecological study aiming at identifying seasonality and/or the impact of meteorological conditions on the incidence of bloodstream infections (BSIs) in a hemodialysis clinic in inner São Paulo State, Brazil. METHODS: The study was conducted in the hemodialysis clinic in the teaching hospital from Botucatu School of Medicine. Data from prospective surveillance of BSIs from January 2011 through December 2016 were analysed, altogether with data from a nearby meteorological station. Univariable and Poisson regression models were used to test associations with average, maximum and minimum monthly temperature and relative humidity values, and with aggregate rainfall. Autocorrelation models were used to test for seasonality. Statistical analysis was conducted in NCSS 9 (LLC, Kaysville, Utah, USA). RESULTS: The overall incidence of BSIs for the study period was 1.5 per 1,000 access-days, with a total number of 247 episodes. We found association of incidence with minimum monthly temperature (adjusted Rate Ratio [RR], 1.070; 95%Confidence Interval [CI], 1.003-1.142; P=0.003). In autocorrelation models, there was significant correlation (Correlation coefficient=0.40; P<0.05) of monthly incidence values with lag12 values (i.e., with values obtained 12 months earlier). CONCLUSIONS: There is evidence of seasonality and influence of temperature on the incidence of BSIs in hemodialysis. Further multicentre studies including clinics from countries with different climates may help elucidating determinants of incidence and strategies to prevent BSIs during warm seasons.

[83]
Predictors of non-surgical site infections and death in surgical patients

ERALDO DE DE ALMEIDA NETO; RICARDO DE SOUZA CAVALCANTE; SANDRA MARA QUEIROZ; ÉRIKA CIBELE PEREIRA PAVAN; ADRIANA ESTELA BIASOTTI GOMES; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Surgical procedures impact on patients´ mortality and morbidity beyond surgical site infections. We conducted a study to identify incidence, predictors and mortality of non-surgical site infections in a cohort of surgical subjects from a teaching hospital. METHODS: The study was conducted in the teaching hospital of Botucatu School of Medicine (city of Botucatu, São Paulo State, Brazil). We analyzed retrospectively 31,484 patients who underwent surgical procedures during 2010-2016. Multivariable logistic regression models were used to investigate predictors for outcomes of interest (pneumonia [PN], urinary tract infection [UTI], primary bloodstream infection [BSI] and death). RESULTS: Cumulative incidences were as follows: PN, 0.8%; UTI, 0.9%; BSI, 0.6%. The incidence of surgical site infection (SSI) was 3.4%, and 4.7% of subjects in the cohort died during admission. Predictors for PN were age (OR=1.008; 95%CI=1.004-1.011), a clean-contaminated procedure (versus clean, OR=1.93; 95%CI=1.09-3.48) and a previous SSI (OR=3.18; 95%CI=2.25-4.48). For UTI: age (OR=1.009; 95%=1.005-1.012), female gender (OR=1.29; 95%CI=1.10-1.65) and SSI (OR=3.01; 95%CI=2.10-4.32). For BSI: age (OR=0.991; 95%CI=0.984-0.997) and SSI (OR=5.06; 95%CI=3.54-7.23). In the analysis of predictors for death, we found age (OR=1.027; 95%CI=1.024-1.030), SSI (OR=2.31; 95%CI=1.93-2.77), PN (OR=1.92; 95%CI=1.40-2.63), UTI (OR=1.62; 95%CI=1.15-2.27) and BSI (OR=2.81; 95%CI=1.96-4.03). Subjects who underwent clean-contaminated and dirty surgeries were also more likely to die. CONCLUSIONS: SSI was a risk factor for infections in other sites, and all infectious syndromes investigated in this study increased the risk of death in the cohort.

[86]
Phenotypic and genotypic characteristics of *Acinetobacter baumannii* resistant to antimicrobials

DANIELLA CRISTINA RODRIGUES PEREIRA; MARTA DE CAMPOS NEVES; MARIA HELENA SIMÕES VILLAS BOAS

OSWALDO CRUZ FOUNDATION, BRAZIL.

Acinetobacter baumannii as an important opportunistic pathogen, responsible for infections related to health assistance and hospital outbreaks, particularly in intensive care units. In the last decade, *A. baumannii* strains fast became multiresistant to many antimicrobial agents, favouring the spread between patients and the persistence in hospital environment for long periods. In this study, the goal was to identify *A. baumannii* clinical isolates originated from two public hospitals from Rio de Janeiro using conventional and automatized methods, besides molecular techniques. Also, antimicrobial drugs and a quaternary ammonium compound (QACs) disinfectant susceptibility of these isolates was investigated. Survival ability in environments with lack of water was also investigated. Among the ninety-four isolates belonging to *A. baumannii* species, eighty-nine presented oxacillinases codifying genes bla_{oxa-23}, bla_{oxa-51} and the insertion sequence *ISAba*1 at the same time. Eighty-seven *A. baumannii* isolates presenting multiresistant (MDR) profile were detected, representing a serious concern because most of these presented susceptibility only to polipeptidic (colistin) and glycylcyclines (tigecycline) and resistance to carbapanemics (imipenem and meropenem), to β-lactamics (penicillins) and to cephalosporins. Genotypic and phenotypic analysis of the resistance to QACs demonstrated that *A. baumannii* isolates most susceptible to antimicrobial drugs did not presented *qacE□1* gene. In only 5 isolates presenting MDR profile, *qacE□1* gene was detected. All isolates shown to be susceptible to disinfectant used in this study through use dilution method.On the other hand, was observed that an isolate that presented all phenotypic and genotypic antimicrobial resistance characteristics and QACs resistance gene was able to survive until the fortieth day of incubation in an environment totally lack of water.

[87]
Sink faucets can be an environmental reservoir of *Fusarium* at a cancer center

RAQUEL KEIKO DE LUCA ITO[1]; MARISTELA PINHEIRO FREIRE[1]; PATRICIA RODRIGUES BONAZZI[1]; KARIM YAQUB IBRAHIM[1]; LIGIA CAMERA PIERROTTI[1]; EDSON ABDALA[1]; ANA CAROLINA PUIN DA SILVA[1]; MICHELY FERNANDES VIEIRA[1]; JOSE EDUARDO LOPES DA SILVA[2]; JULIANA PEREIRA[1]; VANDERSON GERALDO ROCHA[3]; MARCIA DE SOUZA CARVALHO MELHEM[4]; MARILENA DOS ANJOS MARTINS[4]; DULCILENA DE MATOS CASTRO E SILVA[4]; LUCAS XAVIER BONFIETTI[4]; MARIA WALDEREZ SZESZS[4]

1.INSITUTO DO CÂNCER DO ESTADO DE SÃO PAULO; 2. ICESP; 3. HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO; 4. INSTITUTO ADOLFO LUTZ, SÃO PAULO STATE, BRAZIL.

Background: Invasive mold infections, such as fusariosis, are an important cause of mortality, especially in immunocompromised patients. The aim of this study is to show the presence of Fusarium species in the hospital environment as a possible source of nosocomial infection at a cancer center. Method: Environmental samples were collected during the first half of 2016, since the appearance of 6 cases of proven fusariosis in patients with hematological malignancies. Proven fusariosis was defined as the isolation of Fusarium spp. from any sterilized biologic material, such as blood or skin biopsy, or from non-sterile sites in patients with typical clinical signs, including fever and metastatic skin lesions. Water samples were obtained from sink faucets and showers in patient rooms. Air samples were collected from patient rooms, patient bathrooms and from nursing station areas. All samples were inoculated in Petri plates with Sabouraud dextrose agar plus chloramphenicol and were incubated at 30°C for at least 4 days. Fusarium species were identified according to macroscopic and microscopic characteristics. Results: A total of 33 environmental samples were collected from the Hematology ward (18 tap water samples, 3 water samples from head showers and 12 air samples). Two tap water samples were positive for Fusarium species. Both positive samples were collected from rooms occupied by patients with hematological malignancies who developed proven fusariosis during hospitalization. Conclusions: Sink faucets biofilms can be an environmental reservoir of Fusarium species, capable of causing opportunistic infections. Where immunocompromised patients are present, the implementation of environmental control measures, including water chlorination, sink faucets and shower heads disinfection are recommended. The replacement or removal of water-saving devices (faucet aerators) must be considered.

[88]
Klebsiella pneumoniae producing carbapenemase (kpc) a case–control study

ELISA GOUVEA BOGOSSIAN; DIAMANTINO RIBEIRO SALGADO; YASMIN CARVALHO; MATEUS PEREIRA; SIMONE ARANHA NOUER

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO (UFRJ), BRAZIL.

Introduction: The emergence and dissemination of multiresistant bacteria related to health care, especially Klebsiella producing carbapenemases (KPC), is of great concern. Outbreaks have been reported in different types of Intensive Care Units (ICU). In Brazil, there have been reports of KPC since 2006 and, nowadays, it is considered endemic. We recently experienced a large outbreak at our hospital. Objective: To study the differences between patients who acquired KPC from those who didn´t during their stay in the ICU.Method: A retrospective case-control study from May 2014 - June 2015: KPC outbreak in the ICU of a university hospital in Rio de Janeiro-Brazil. Patients admitted in the ICU were classified as case (KPC yielded from any biological material,analysed by molecular methods) or control (patients whithout carbapenem resistant enterobacteriacea). Both groups were compared according to demographic data,severity scores at ICU admission, length of stay (LOS) and mortality at ICU and hospital. A p value < 0.05 was considered statistically significant.Results: 377 patients were admitted in the ICU during the studied period. 35 patients had KPC samples isolated from different biological material, after being admitted in the ICU. There was no difference considering gender, age, and SAPS III and SOFA scores on ICU admission. The median number of days for acquiring KPC was 14. Patients with KPC had greater ICU and hospital LOS than control patients (35 [12-55] vs 3 [1-8] days, p<0.001 and 56 [38-80] vs 17 [9-30] days, p<0.001, respectively).KPC patients required more mechanical ventilation (85.8% x 45.8%; p<0.001),dialysis (48,6% x 18.5%; p<0,001) and had a higher incidence of sepsis (80% vs 44.5%, p<0.001) . ICU(40% vs 30.1% p=0.299)and hospital(62.9% vs 36.8% p=0.01) mortality rates were higher in KPC group.Conclusion: During a KPC outbreak in the ICU, the isolation of KPC was associated with greater ICU and hospital LOS/ mortality rates/life support requirements.

[89]

Incidence and clinical features of hospital acquired infections among HIV-positive patients

ANA ELISA RICCI LOPES[1]; MAYRA GONÇALVES MENEGUETI[1]; GILBERTO GAMBERO GASPAR[1]; SEILA ISRAEL DO PRADO[1]; SILVIA RITA MARIN DA SILVA CANINI[2]; ANA MARIA LAUS[2]; CINARA SILVA FELICIANO[1]; LÉCIO RODRIGUES FERREIRA[1]; FERNANDO BELLISSIMO-RODRIGUES[3]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO; 2. ESCOLA DE ENFERMAGEM DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO; 3. FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

INTRODUCTION: Hospital-acquired infections have become a public health problem with great epidemiological relevance, since they raise morbidity and mortality rates and increase treatment costs. HIV-infected patients have raised risk for hospital-acquired infections as a result of compromised immune system. OBJECTIVE: To evaluate the incidence of hospital-acquired infections among HIV-positive patients, and to describe selected clinical features of these infections. METHODS: This was a retrospective cohort study performed in a tertiary-care university hospital from January to December 2015. All patients hospitalized during the period were included. A nurse belonging to the hospital infection control service daily evaluated the occurrence of hospital-acquired infections, which were defined according to the Centers for Disease Control and Prevention (CDC) criteria. Univariate analysis of the variables hospital stay and age were performed using Mann-Whitney test to analyze data with $\alpha = 5\%$. RESULTS: Among 288 HIV-positive patients admitted in the study period, 19 hospital-acquired infections were diagnosed in 17 patients (6.6%). Of these, 8 (42%) were pneumonia, 7 (37%) bloodstream infections, 3 (16%) cellulitis and 1 (5%) urinary tract infection. There was an association between length of stay and risk of infection ($p<0.001$), but this did not occur with age ($p=0.54$). Among patients with hospital-acquired infection, mortality rate was 35% and in patients without hospital-acquired infection it was 17%. CONCLUSION: The incidence of hospital-acquired infection among HIV-positive patients was 6.6% and pneumonia was the most frequent infection (42%). Length of stay was associated with the occurrence of hospital-acquired infections and these patients had a high mortality rate.

[91]

Infections caused by community-acquired methicillin-resistant *Staphylococcus aureus* among

SEILA ISRAEL DO PRADO[1]; DENISSANI APARECIDA FERRARI DOS SANTOS LIMA[1]; ROBERTO MARTINEZ[2]; MARIA CELIA CERVI[2]; MAYRA GONÇALVES MENEGUETI[1]; ANA ELISA RICCI LOPES[1]; FERNANDO BELLISSIMO-RODRIGUES[2]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO; 2. FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Background. Community-Acquired Methicillin-Resistant Staphylococcus aureus (CA-MRSA) have emerged as a new pathogen in North America in the mid-1990s and spread to all continents during the two last decades. In Brazil, cases of CA-MRSA infections have been reported but little is known about the epidemiology of these infections. Objective. To evaluate clinical and microbiological aspects of severe infections caused by CA-MRSA among children. Methods. Descriptive study, performed on the emergency unit of a tertiary-care public hospital, from January 1st, 2012 to December 31, 2016. We screened the microbiological lab records on the search for every culture result positive to S. aureus. From that screening, we searched on the patients' medical records for selected clinical characteristics, aiming to include all children aged between 1 month and 17 years old admitted with a community-acquired infection due to this pathogen. Health-care associated infections were not analyzed. Results. We included 122 cases with severe community-acquired infection due to S. aureus, being 43 of them classified as CA-MRSA. The proportion of CA-MRSA cases observed among all S. aureus infections in each study year was as it follows: 33.3% in 2012, 24.0% in 2013, 31.8% in 2014, 30.4% in 2015, and impressive 51.6% in 2016. Antimicrobial susceptibility percentage among CA-MRSA strains were: 95.3% to sulfamethoxazole/trimethoprim, 97.7% to clindamycin, 97.7% to rifampin, 100% to tetracycline, 100% to vancomycin and 7.0% to erythromycin. Most of the infections involved skin and soft tissues (24/43, 55.8%), many others were osteoarticular infections (17/43, 39.5%), and some were pneumonia (2/43, 4.6%). Case fatality rate for all CA-MRSA infections were 4.6% (2/43). Conclusion. CA-MRSA pediatric infections were confirmed to be common and severe in the study setting. This scenario highlights the need to cover CA-MRSA on the empirical treatment of severe skin and soft tissue infections among children.

[92]
Evaluating risk factors for surgical site infection after pediatric cardiac surgery

SEILA ISRAEL DO PRADO[1]; CAROLINA JACOVETTI[1]; MAYRA GONÇALVES MENEGUETI[1]; ANA ELISA RICCI LOPES[1]; FABIANA MURAD ROSSIN MOLINA[1]; GILBERTO GAMBERO GASPAR[1]; FABIO CARMONA[2]; ANA PAULA C. P. CARLOTTI[2]; FERNANDO BELLISSIMO-RODRIGUES[2]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO; 2. FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

INTRODUCTION. Surgical Site Infection (SSI) is a potentially life-threating complication for patients undergoing cardiac surgery. Most of the risk factors for SSI were identified through studies based on adult populations, being scarce the evidence gathered from pediatric populations. OBJECTIVE. To identify risk factors for developing SSI among pediatric patients undergoing cardiac surgery. METHODS. This was a case control study performed in a tertiary-care university hospital from January 2011 to December 2015. We included as cases all children who developed a SSI during the study period and as controls, patients matched 1:1 by procedure and week of surgery, but who did not experienced SSI. SSI diagnosis was made based on the Centers for Disease Control and Prevention (CDC) criteria, including post-discharge surveillance. Selected clinical and demographic characteristics were evaluated on the patient's medical records as potential risk factors for SSI. Antimicrobial prophylaxis was considered adequate if cefazolin or vancomycin were administrated in appropriated doses, within 1 hour prior to the surgery. We used Two-tailed Fisher's exact and Mann-Whitney tests for statistical analysis. RESULTS. We detected 48 cases during the study period and we included 48 controls, as predicted. The following variables were not associated with those who experienced SSI versus those who did not, respectively: age (33 vs. 66 days, p=0.191), delayed sternal closure (32% vs. 32%, p=1.000) and time of extracorporeal circulation (110 vs. 93 minutes, p=0.534). The only variable associated with SSI was inadequate antimicrobial prophylaxis (14.6 among cases vs. 0% among controls, p=0.019). CONCLUSION. Inadequate antimicrobial prophylaxis was found to be a relevant risk factor for SSI after pediatric cardiac surgery.

[93]
Risk factors for developing catheter-related bloodstream infections among children

SEILA ISRAEL DO PRADO[1]; LAIS ARRIGUCCI RODRIGUES TONIZZA[1]; MAYRA GONÇALVES MENEGUETI[1]; ANA ELISA RICCI LOPES[1]; FABIANA MURAD ROSSIN MOLINA[1]; GILBERTO GAMBERO GASPAR[1]; FERNANDO BELLISSIMO-RODRIGUES[2]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO; 2. FACULDADE DE MEDICINA DE RIBEIRÃO PRETO DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Background: bloodstream infections (BSI) remain a leading cause of morbidity and mortality among infants. At the time of evaluation for suspected BSI, risk factors may be nonspecific. Objective: we sought to evaluate risk factors for BSI among infants who were using short-term central venous catheters in a tertiary-care university hospital. Methods: This was a prospective cohort study performed in a tertiary-care university hospital from October 1st 2014 to September 30, 2015. We followed all pediatric patients using short-term central venous catheter during the study period. All catheters were inserted in the operating room. BSI diagnosis was made based on the Centers for Disease Control and Prevention (CDC) criteria. We used a two-tailed Fisher's exact test. Means of continuous variables were compared using Mann-Whitney test. To adjust the analysis for possible confounding factors, we used a logistic regression model that only included variables that presented a possible association with the occurrence of BSI (univariate statistical analysis with $p \leq 0.20$). Results: During the study period, 11 BSI occurred in 33 patients (33.33%). The following variables were associated with those who experienced BSI versus those who did not, respectively: age (132 vs. 16 months, $p=0.0001$) and exposure to total parenteral nutrition (72.73% vs. 22.73%, $p=0.009$). Independent risk factors for central line-associated BSI were age (OR = 1.025) [95%CI:1.003-1.048]) and a borderline association was detected with exposure to total parenteral nutrition (OR = 52.186 [95%CI:0.82-3309]). Sex ($p=1.000$), catheter insertion site ($p=0.122$) were not associated with BSI. Conclusion: Age and exposure to total parenteral nutrition were found to be possible associated with BSI among children in use of short-term central venous catheters.

[94]
Identifying inpatients to outpatient parenteral antimicrobial therapy (opat): a prevalence study

ELIANE MOLINA PSALTIKIDIS[1]; MARIÂNGELA RIBEIRO RESENDE[2]; KAREN PRADO HERZER MATTOS[2]; MIRTES LOESCHNER LEICHSENRING[1]; RENATA FAGNANI[1]; TIAGO CRISTIANO LIMA[1]; LUIS GUSTAVO CARDOSO[1]; LUIS FELIPE BACHUR[1]; CHRISTIAN CRUZ HOFLING[1]; MARIA LUIZA MORETTI[2]

1.HOSPITAL DE CLÍNICAS DA UNIVERSIDADE ESTADUAL DE CAMPINAS - UNICAMP; 2. FACULDADE DE CIÊNCIAS MÉDICAS DA UNIVERSIDADE ESTADUAL DE CAMPINAS – UNICAMP. CAMPINAS, SÃO PAULO STATE, BRAZIL.

Objectives: to identify patients with potential indication to OPAT among inpatients with antimicrobials at a Brazilian public tertiary hospital. Methods: a point prevalence cross-sectional study was performed (August/2016), before the implementation of cost-effectiveness OPAT project. All patients using parenteral antimicrobial were evaluated for a multidisciplinary team to evaluate pre-requirements for a safety transitional care to OPAT (stable clinical condition, venous access, social and logistic issues). Pediatric patients or with critical conditions or surgical antibiotic prophylaxis or with oral antimicrobial alternative were excluded. Results: Among 390 inpatients, 192 (49.2%) were in antimicrobial therapy, 59.4% were male (median 52 years). Piperacillin plus tazobactam, meropenem, ciprofloxacin, vancomycin and B polymyxin were the antimicrobials more frequently used. Antimicrobial use was more frequent at surgical wards (37.5%), intensive care unit (21.3%), emergency unit (19.8%), clinical wards (16.1%). After the first assessment, of 192 inpatients using antimicrobial drugs, 177 were not eligible to OPAT: 75% due to critical or instable clinical status, 13% with surgical antimicrobial prophylaxis and the remaining were pediatric patients or they had oral alternative therapy. Of 15 eligible patients, the multidisciplinary team assess clinical, social and logistic components for OPAT, including 7 (3.6%) cases with all OPAT criteria. Of these, two cases with osteomyelitis, two cases with urinary tract infection, two cases with catheter related blood infection and one with bacterial pneumonia. Multidrug-resistant microorganisms were isolated. OPAT regimen proposed for these patients were vancomycin, meropenem or ertapenem, combined or isolated. Conclusions: although few patients were identified for start OPAT modality this multidisciplinary strategy requires cost-effectiveness evaluation in different levels of the Brazilian health care system.

[95]

Use of surveillance cultures to screen MR bacteria on admission of patients at a hospital proved

ANNA KARENINE BRAÚNA CUNHA; THÂMARA FERREITA BRITO DOURADO; SILVANA DUARTE TAMBELLINI; DANILO SOUZA ARGOLO

HOSPITAL JORGE VALENTE, STATE OF BAHIA, BRAZIL.

INTRODUCTION / OBJECTIVES: Health Care-Related Infections (HAIs) are a serious public health problem worldwide, adverse events are associated with health care and have high morbidity and mortality. Multiresistant microorganisms play an important role as etiological agents that cause these infections. The objective of this work is to perform the screening of multiresistant microorganisms from patients from other health institutions in a private hospital of 142 beds in Salvador / Ba. Methods: Surveillance cultures (anal swab, biaxillary and oropharynx) were collected from all patients who were admitted to the hospital, from another health care institution (home care, hospitals, hemodialysis clinics) who stayed for a longer period or Equal to 24 hours and who were hospitalized in the last 30 days. The data collection period was from January 2012 to December 2016. Results: All samples were collected and we found the following results: We collected 4496 samples from surveillance cultures (1525 of anal swab, 1591 of biaxillary And 1380 of oropharynx), we obtained 1204 (26.8%) positive samples and 98 (8.1%) samples of multiresistant bacteria. Among the MR bacteria according to the hospital standard, we found: 06 Acinetobacter ssp (6.1%), 03 Citrobacter ssp (3.1%), 13 Enterobacter ssp (13.3%); 15 E. coli (15.3%); 19 K. pneumoniae (19.4%), 03 Proteus mirabilis (3.1%), 34 P. aeruginosa (34.7%) resistant to carbapenems; 3 S. aureus (3.1%) resistant to methicillin. Conclusion: With the institutional policy of isolation precautions, the search for multiresistant microorganisms in the admission of patients further strengthened the routine maintenance of contact precautions in the hospital , Since during the analyzed period no outbreak and no form of cross-transmission were detected.

[96]
Adhesion to hand hygiene in the surgical center: an eternal challenge

SHIRLENY JESUS DE SOUSA; REGIA DAMOUS FONTENELE FEIJÓ

AMBULATÓRIO MÉDICO ESPECIALIZADO BARRADAS, SÃO PAULO, BRAZIL.

Introduction: Hand hygiene is one of the simplest and most effective measures to control health care-related infections (IRAS). The hands of health professionals continue to be the main form of transmission, being this by direct or indirect contact, and the rate of adhesion to HM is around 40-50% and this data is much lower when we evaluate professionals from the Surgical Center .Objective: To evaluate the overall adhesion rate to hand hygiene in the AME surgical center by professional category.Methodology: This is a retrospective observational study that is based on the methodology of direct observation of adherence to HM in the years 2015 and 2016 in the Surgical Center of the Ambulatory of Medical Specialties. The AME performs 1.500 surgeries and performs examinations and consultations in several medical specialties. Data collection is performed through a checklist where the Infection Control Service nurse observes the accomplishment of the 05 moments for HM, in all professional categories within the Surgical Center (Physicians, anesthesiologists, nurses, instrumentators and technicians / nursing). At the end of the month, these data are tabulated and posted to the system, so that all Managers monitor and follow us throughout the year.Results:The overall rate of HM (excluding surgical brushing) at the surgical center by professional category in the years of 2015 and 2016 was: physician surgeons were 13.1% and 10.3%; Anesthetists were 4.4% and 6.8%; Nurses performed HM at a rate of 68.3% and 76.6%; Surgical instrumentators showed adhesion of HM of 73.2% and 51.2%; Auxiliaries and technical / nursing auxiliaries obtained rates of 64.0% and 63.0%.Conclusion:The overall rate of HM evaluated over the years from 2015 to 2016 by professional category was observed that they had more opportunities for improvement mainly by the teams of medical surgeons and anesthetists through the records. However, we know that medical training is a major challenge for Infection Control.

[97]
Orthopedic team self-referenced index about guidelines for the prevention of surgical site infection

TAYSA FÁTIMA GARCIA[1]; ADRIANA CRISTINA OLIVEIRA[2]

1.NÚCLEO DE ESTUDOS E PESQUISAS EM INFECÇÔES RELACIONADAS AO CUIDAR EM SAÚDE; 2. UNIVERSIDADE FEDERAL DE MINAS GERAIS, BRAZIL.

Surgical Site Infections (SSI) are amidst the most important, associated with health care, comprising about 31% of those found in hospitalized patients. When occur, they increase the treatment costs, time of hospitalization, and the risks of patients' morbimortality. Even with recommendations for their prevention, infection rates remain alarming and it may be related to non-adherence to the published guidelines. The objective was to evaluate the self-reported index by the orthopedic surgery team on international and national recommendations and guidelines for the prevention of surgical site infection. This was a descriptive study performed on Surgical Centers (SC) from two hospitals located in the city of Belo Horizonte, Minas Gerais. Data were analyzed through descriptive analysis. A total of 133 professionals were eligible, wherof 30 were orthopedic surgeons, 10 nurses and 93 nursing technicians. It was observed a predominance of women, 61.3%; age> 35 years (53.4%). The lowest self-reported index was highlighted in measures such as indication of nasal decontamination in patients with MMR, 10.7% by the medical staff; indication of preoperative bath, 6.6% by physicians and 7.8% by nursing staff. Only 10,0% and 3,0% of the respective teams referred to the correct time of glove exchange, and 13.3% and 9.7% cited patient surveillance after discharge in the period of 30-90 days. Although the staff claims to know about the measures, they have had means related to measures that are much smaller than expected, which may be related to the lack or lack of knowledge, or the tendency to consider measures that they know best / practice in their routine factors that can affect behavior, leading to poor adherence to what is recommended. In this sense, conducting audits on the knowledge/adherence of staff becomes important for verification and intervention specific with the objective of ensuring professional updating, reinforcing your importance for SSI Prevention.

[99]
Evaluation of the adherence of surgical antibiotic prophylaxis in an ambulatory specialty service

REGIA DAMOUS FONTENELE FEIJÓ; SHIRLENY JESUS DE SOUSA

AMBULATÓRIO MÉDICO ESPECIALIZADO BARRADAS, SÃO PAULO, BRAZIL.

Introduction:Antimicrobial prophylaxis in surgeries is an important tool in the prevention of surgical site infection (ISC);However this measure should not be isolated and should be in conjunction with the other prevention measures. Surgical prophylaxis is linked to the development of resistant microbiota, which is why its use should be rational and justified.Objective:To evaluate the adequacy of surgical antibiotic prophylaxis (APC) items as an adequate antimicrobial, dose and time of administration of the antibiotic prophylaxis in surgeries that received surgical prophylaxis.Methodology:This is a retrospective observational study with search of data in the medical record.The Ambulatory Medical Specialty (AME) has 1,500 surgeries per month and serves several medical specialties.The suitability of the antimicrobial according to the guideline of the APC, the dose of the antibiotic and the adequacy of the schedule of administration of the antibiotic of the surgeries evaluated in the years of 2012 and 2016 were evaluated.This information of the antibiotic prophylaxis is obtained after revision of the patient's medical record, From 30 days after the surgeries.At the end of the month the data are tabulated and posted to the system for feedback to managers so that they monitor and track the results over the years.Results:The antibiotic adequacy percentage of the years 2012 and 2016 was 99.70%, 99.30%, 99.50%, 99.90% and 99.70%.The dose adequacy of the antibiotic was 98.50%, 95.50%, 99.70%, 99.90% and 99.90%. The adjustment of the schedules was 78.70%, 94.60%, 98.20%, 99.40% and 99.60. Conclusion: We observed a great improvement in the APC adequacy rate in the surgeries evaluated over the years of 2012 and 2016.However, these results are a great challenge, since the maintenance of good numbers depends on monthly evaluation and feedback to resolve the inadequacies. The training of the nursing team together with the medical team is a great challenge for Infection Control.

[100]

Nosocomial respiratory infection in adult patients hospitalized under enteral nutrition therapy

ESTER SCHWARZ; CELIA MARIANA BARBOSA DE SOUZA; CLAUDIA HALLAL ALVES GAZAL; MICHELLI CRISTINA SILVA DE ASSIS; RODRIGO PIRES DOS SANTOS; TATIANA MARASCHIN

HOSPITAL DE CLINICAS DE PORTO ALEGRE, STATE OF RIO GRANDE DO SUL, BRAZIL.

Introduction: Malnutrition among hospitalized patients can lead to reduced immunity increasing a chance of infection. In view of this scenario, there was a prevalence of weight loss, enteral nutritional support offered and rates of respiratory infection among adult patients. Methods: This is a cross-sectional study carried out in a general university hospital in Brazil from August 2016 to January 2017. Adults receiving enteral nutrition were selected from clinical wards. Data was acquired from patients' medical records. Weight loss was considered significant when greater than 5% of the weight at admission; enteral nutritional support was considered adequate when 70% of prescribed dose was given. Nosocomial respiratory infection was designed according to Anvisa criteria. The data was analyzed through descriptive statistics and expressed as frequency and percentages. Results: A total of 91 patients were evaluated, 50% presented weight loss above 5% during hospitalization. The majority of patients received on average only 40% of the volume of enteral nutrition prescribed. During the evaluated period, 17.6% developed nosocomial respiratory infection. Conclusions: The results of this study demonstrate a high prevalence of intrahospital weight loss, as well as a low volume of enteral nutrition offered to the patient. These indicators may also contribute to the high percentage of respiratory infections.

[101]
Urinary tract infection associated with catheter delay bladder in intensive care unit

ÉCILA CAMPOS MOTA[1]; LORENA RODRIGUES BARBOSA[2]; ADRIANA CRISTINA OLIVEIRA[3]

1.FEDERAL INSTITUTE OF THE NORTH OF MINAS GERAIS; 2. STATE UNIVERSITY OF MONTES CLAROS; 3. SCHOOL OF NURSING, FEDERAL UNIVERSITY OF MINAS GERAIS, BRAZIL.

introduction: the catheter-associated urinary tract infections (CAUTI) are the most frequent healthcare-associated infections in patients admitted to intensive care units (ICU), contributing to longer time and higher cost of hospitalization, and increased mortality. objective: this study aims to determine the prevalence and associated factors of CAUTI among patients in the ICU. methods: this prospective cross-sectional study was conducted with all patients who were admitted in the ICU in 2013 and 2014. The data was collected by analysis of medical records with the use of a semi-structured instrument. Descriptive analysis was performed and the Poisson regression was adopted with 95% of confidence interval. results: 169 patients were evaluated, and 145 (85,8%) catheterizations were identified. The age average was 56,6 years (standard deviation of $\pm$ 19.9). The prevalence of CAUTI was 16,6%, with 43,2% of the occurrences in women and 56,8% in men. Factors associated with CAUTI were hospitalization time $\geq$ 15 days (RP: 4.59; 95% CI: 1.96 to 10.78), and use of catheter $\geq$ 10 days (RP: 7.39; 95% CI: 3.17 to 17.24). conclusion: hospitalization time and the use of the urinary catheter was directly proportional to the occurrence of CAUTI. Continuous efforts involving health professionals for precision of indications and daily monitoring to limit the duration of catheterization are primordial for improving the safety in patient population in ICU.

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Isolation procedures - control measures of multiresistant microorganisms in a university hospital

ISABELA DE SOUZA COLOMBO, JHESSICA LETÍCIA CAVARZAN; LAUANA IGNACIO WENCESLAU; LUANA LAIS FEMINA; LUCIANA ELENA TIRELLI KALTENBACHER; ISABELA DE SOUZA COLOMBO; ANDRESSA BATISTA ZEQUINI; ANDREA CECÍLIA RODRIGUES MESTRINARI; LUCIANA SOUZA JORGE; MELISSA MAIA BRAZ; MARCIA WAKAI CATELAN; FRANCISCO INALDO MENDES DA SILVA JUNIOR; VIVIANE ANHETI PRADO

FUNDAÇÃO FACULDADE DE MEDICINA DE SÃO JOSÉ DO RIO PRETO, SÃO PAULO STATE, BRAZIL.

Introduction: In the era of increasing rates of antibiotic resistance worldwide, there is an ongoing discussion on the adequacy of specific infection control strategies in preventing transmission of multidrug-resistant bacteria. Objective: The survey aimed at approaches currently established in high-risk wards in quaternary hospital. Methods: A survey was conducted retrospectively between November 2016 and March 2017 assessing the current practice in contact precautions for patients with multidrug-resistant pathogens. A checklist was designed, including infection control measures, such as, identification board, gloves, non-disposable gown and equipment trolley after conducting training programs. Results: Of the 977 observations, 825 (83%) were performed in the nursing units and 172 (17%) in intensive care units. Identification board was correctly placed in 893 (90%) cases. Most accomodation of colonised/infected patients was cohort isolation (435; 44%), 239 (24%) in rooms with patients without infection by multidrug-resistant bacteria and 323 (32%) in single rooms. As regards compliance with the environmental measures (e.g., cleaning and disinfection of the patient care environment and equipment, dedicated single-patient-use of non-critical equipment), 978 (98%) were correctly employed. Of the 997 gowns, 570 (57%) were in use, 319 (74.7%) were properly folded after use e 108 (25.3%) had been removed incorrectly, with 81% of gowns with the contaminated surface exposed to the environment. Equipment trolley was present in 943 (94,%) and management of solid waste emanating from the healthcare environment was correct in 951 (95.3%) of the observations. Conclusion: Non-compliance to isolation procedures is due to a deficit of disposable materials but also to due individual behaviours. It is important to intensify programs based on behavioral intervention models in order to change attitudes related to contact isolation precautions for multi-drug resistant microrganisms.

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Influence of increased alcohol consumption on the reduction of hospital infection in neonatal ICU

JULIANA DIAZ SIEBRA; REGIA DAMOUS FONTENELE FEIJÓ; LEANDRO DEFACIO; ALINE APARECIDA CARNEIRO SOUZA; GRAZIELA LOPES DAL BEN; TALITA ELCI DE CASTRO MAGALHÃES; JOSÉ JAIR JAMES DE ARRUDA PINTO

REDE DOR SÃO LUIZ, SÃO PAULO, BRAZIL.

INTRODUCTION: Health care-related infections (HAIs) are a major problem for newborns, as they have a major impact on morbidity and mortality. Several factors are determinant for the incidence of infection related to health care in the Neonatal Intensive Care Unit (NICU) such as low birth weight, invasive therapies, length of stay and use of antibiotics. The association between hand hygiene and health care-related infection reduction has been proven for more than 150 years and remains a global challenge. OBJECTIVE: To correlate the density of IRAS in the NICU with alcohol consumption for Hand Hygiene (HM). METHOD: A retrospective study carried out at the NICU of a private institution in the city of São Paulo, Brazil, with 60 beds from May 2016 to February 2017, by analyzing the density of IRAS in all weight ranges at birth and measuring the consumption of alcohol preparation for HM per patient-day in the same period. It was considered IRAS, the infections diagnosed after 48 hours of life of the newborn using the criteria of definition of IRAS of ANVISA, 2013. RESULT: We observed that in the period there was an increase in alcohol consumption of 41.3 ml per patient-day in May 2016 to 70.9 ml per patient-day in February 2017 in the NICU and a reduction in the incidence density of IRAS of 6, 52/1000 patients-day in May 2016 to 1.39 in February 2017. CONCLUSION: In the analyzed period, we conclude that the strategies used to promote the use of alcohol gel positively impacted the reduction in the incidence density of IRAS in the NICU, which reinforces that the hand hygiene practice is the main measure for the prevention of IRAS.

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Observers group in the monitoring of hand hygiene adherence: an infection control committee strategy

ALINE APARECIDA CARNEIRO SOUZA; REGIA DAMOUS FONTENELE FEIJÓ; JULIANA DIAZ SIEBRA; LEANDRO DEFACIO; JOSE JAIR JAMES ARRUDA PINTO

REDE DOR SÃO LUIZ, SÃO PAULO, BRAZIL.

INTRODUCTION: Hand Hygiene (HH) is an important measure to reduce the cross-transmission of microorganisms and healthcare infection rates but to observe the adherence of this practice by health professionals is a challenge for the Infection Control Committee (ICC). An observers group may be a strategy for ICC to achieve this objective. OBJECTIVE: To evaluate the adherence to HH according to the number of opportunities evaluated from September 2013 to December 2016. METHOD: A cross-sectional, retrospective and descriptive study was carried out in a private hospital of 396 beds in São Paulo, Brazil. The general adhesion was calculated by the number of opportunities offered by HH in the 5 moments recommended by the World Health Organization for the total number of opportunities observed in the sectors: Medical Clinic, Adult and Neonatal Intensive Care Unit, Emergency and Maternity. The observers belong in their majority times to their respective sector and their observer function is not revealed to the other professionals. RESULTS: The number of opportunities evaluated through direct observation was 477 observations in 2013, 8356 in 2014, 16452 in 2015 and 14698 in 2016. Regarding the general adhesion rate, we obtained 73.6% in 2013, 78.8% In 2014, 73.7% in 2015 and 82.9% in 2016. CONCLUSIONS: The Increased observations over the period and the rate of adherence to HH in the year 2016 may show us that an observers group can stimulate the team of health professionals about the practice of HH. It is important to emphasize that the ICC observation in conjunction with the observers group is fundamental in order to validate this observation. The observers group's greatest objective is the constant presence of a sector's professional to instigate all professionals to adopt this important practice in their routine.

[105]

Monitoring of damages in flexible nasofibroscopes disinfected with peracetic acid

ELIANE MOLINA PSALTIKIDIS, MIRTES LOESCHNER LEICHSENRING; SÔNIA CAVINATTO;

HOSPITAL DE CLÍNICAS DA UNIVERSIDADE ESTADUAL DE CAMPINAS – UNICAMP, CAMPINAS, SÃO PAULO STATE, BRAZIL.

Objetive. To evaluate the occurrence of possible damages in nasofibroscopes caused by disinfection in peracetic acid (PA). The fiber manufacturer advises that there is a risk of oxidation and reduction of life time with the use of PA, resulting loss of equipment warranty´s if this solution was used. Method. This was an applied research. We prospectely monitored the integrity of NFF submitted to disinfection in PA, at the Hospital de Clínicas – Unicamp, Brazil. Three new nasofibroscopes were monitored and photographed under stereomicroscope for 18 months. A disinfection protocol was elaborated. Both nursing and medical teams were trained with emphasis on the correct handling and safe processing of the fibers. Results. The fibers were assessmented and photographed by stereomicroscope, before the first use and regularly during the study period, totaling 3979 uses. Was observed cracking of the excess adhesive material around the sealing area in all fibers, without functional impairment. One fiber, with more than 2000 uses, presented superficial cracking in the coverage of the distal tip of the nasofibroscope, without altering the sealing test. Conclusion. Peracetic acid, in the formulation used, did not cause functional damage or oxidation resulting to disinfectant at study period. Training of the entire team was critical to ensure processing safety and maintaining fiber integrity.

[106]
Ostensive round for patient safety: patient empowerment

CLAUDIA M. DANTAS DE MAIO CARRILHO; RENATA APARECIDA BELEI; FLAVIA MENDONÇA DA SILVA OUSSAKI; VIVIAN BIAZON EL REDA FEIJO; JAYNE AKEMI OHARA; GILSELENA KERBAUY LOPES; MARIANA ROMERO; CAROLINA RODRIGUES MILHORINI

UNIVERSIDADE ESTADUAL DE LONDRINA, STATE OF PARANÁ, BRAZIL.

Introduction / objectives: One of the risks patients undergo when receiving assistance in health services is the acquisition of Hospital Infection (HI), a serious problem that compromises patient safety as it is the cause of significant mortality and morbidity rates . Despite all the prevention efforts and practices adopted in the health services, the prevalence of this disease remains high in most hospital institutions. In recent years, the patient's participation in the health process has been recognized as the key to improving care and administrative processes, reducing errors and improving the safety and quality of the service provided. In this way, the patient can assume a new role, more active, but needs knowledge, more specific and logical guidelines, in order to give him the confidence and willingness to participate in the processes in which he is inserted. We report the implementation of the weekly round in patients hospitalized in the units of a university hospital. Intervention: a script was developed and applied to conduct an interview with conscious patients, who were guided on the main measures to be performed by the health professionals and by the patient himself to prevent hospital infection. Results: The rounds were carried out by nurses from the institution and allowed to identify the follow-up of HI control protocols and to guide patients on the importance of each routine, focusing on cleaning the environment and specific care directed to respiratory, urinary, surgical and respiratory tract infections. catheter. Thus, the patient was empowered with information, in order to understand the importance of following certain preventive practices in the hospital routine. Conclusion: the empowerment of the patient by providing information on HI prevention can contribute to the fact that they can become active in the care process, besides helping to detect failures following the practices recommended by the IH commitee in the institution.

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Use of chlorexidine curative in central venous cateter: analysis of prevalence of infection

JAYNE AKEMI OHARA; RENATA APARECIDA BELEI; CLAUDIA MARIA DANTAS DE MAIO CARRILHO; VIVIAN BIAZON EL REDA FEIJO; JOSEANI COELHO PASCUAL; JAQUELINE DARIO CAPOBIANGO; ALEX CARDOSO BARBOSA; GILSELENA KERBAUY LOPES

UNIVERSIDADE ESTADUAL DE LONDRINA, STATE OF PARANÁ, BRAZIL.

Introduction/Objective: Catheterization is a widely used procedure in patients with long hospital stay, demanding a high level of care. About 60% of the bacterial nososcomias may be associated with some intravascular device. The use of dressing is an important measure taken to protect the ostium of the catheter from colonization, preventing the risk of developing infection. The objective of this study was to compare the rates of infections related to central venous catheter before and after the implantation of the antimicrobial dressing of chlorhexidine. Intervention: a retrospective epidemiological study, which analyzed the primary bloodstream infection rate (IPCS) between January 2011 and December 2016, in a university hospital in Paraná. The rates calculated by the IH committee of the institution were evaluated, and the antimicrobial dressing for central venous catheter (CVC) with chlorhexidine started in June 2012. Results: after the implantation of the antimicrobial dressing with chlorhexidine for CVC, a decrease of IPCS: in June 2011 the rate was 1.75%, decreasing to 0.73% in June 2012, reaching the rate of 0% in June of the following years. As for July (3.01%), August (6.29%), September (8.57%), October (5.26%), November (4.35%) and December (4.32%) 2011, a drop of 0.70%, 0.77%, 1.89%, 0.81%, 1.57% and 0% respectively was observed in 2012. In 2016, the rates from January to December were respectively 1.8%, 0.7%, 1.3%, 0%, 1.5%, 0%, 0.9%, 0.8%, 0%, 0.8% . Thus, the annual average of IPCS was 4.86% in 2011; 1.72% in 2012; 1.55% in 2013; 0.91% in 2014; 0.52% in 2015 and 0.70% in 2016. Conclusion: Despite the high cost (R $ 68.80), chlorhexidine antimicrobial dressing for CVC proved to be effective in reducing the prevalence of IPCS, making it a safer practice to Patient care.

[108]
Bloodstream infection: a positive story

ANGELA FIGUEIREDO SOLA; FABIANA SILVA VASQUES; YOLANDA COPPEN MARTIN; REGINA MEDEIROS TRANCHESI; ANTONIO CARLOS PIGNATARI

HOSPITAL NOVE DE JULHO, SÃO PAULO, BRAZIL.

Introduction: Central Line-associated Bloodstream Infection (CLABSI) is an important issue in health services for being related to the increase of mortality rates. Objective: Assess intervention methods and the respective impacts in intensive care unit (ICU) CLABSI. Method: Assessment and appraisal of the CLABSI indicators in the ICU unit of a private hospital in the city of São Paulo, between 2002 and 2016, and the actions taken to arbitrate said ratings. Results: In 2002 the use of hand hygiene gel was introduced in all hospital beds, which the CLABSI density was 5.9. Instructions to procedures involving long-term catheters, in 2003. In 2004, the type of intravenous catheter was changed. In 2007 the CLABSI prevention campaign was launched, along with the mandatory enlistment of catheter insertion dates. In 2008 the catheter group was created. In 2009, the use of needless bloodstream connectors was introduced. In the year of 2010 the intravenous insertion checklist was revised. Procedures taken place in 2012 were the prevention of infections, the use of clear curative plasters impregnated in chlorhexidine 2% and needleless connectors, as well as the use of ultrasonic devices in catheter insertions. In 2015, hand hygiene observations were introduced. Interventions proposed by the hospital infection control services with specific training sessions were developed for the teams, and in 2016 a density of 1.3 CLABSI was achieved. Conclusion: The series of activities, the assistance team's involvement and the support from the management group were fundamental for the settlement of issues, statements and actions, which contributed to the gradual decrease of infection rates in the years of the observed term.

[110]
Implantation of the catheter care line to reduce bloodstream infections

LEANDRO DEFACIO; REGIA DAMOUS FEIJO; JULIANA DIAZ SIEBRA; ALINE APARECIDA CARNEIRO SOUZA; MARIA NAZARE KAHWAGE DAVID; ERIKA MARIA SILVA DE SIQUEIRA; SANY APARECIDA SANT ANA TEIXEIRA; MARIZA SILVA RAMOS LOESCH; JOSE JAIR JAMES DE ARRUDA PINTO

HOSPITAL SÃO LUIZ - UNIDADE ITAIM, SÃO PAULO, BRAZIL.

INTRODUCTION: Hospital infections (HI) are responsible for increased morbidity and mortality, increased length of hospital stay, and increased treatment costs. The IH associated with invasive devices represent a large part of the HI and the monitoring of these devices is an essential measure to identify quality deviations of the assistance, aiming at the prevention of HI and generating indicators about this process. The measures of prevention of HI adopted as the bundle, aim to monitor the adequacy of the measures recommended for the prevention of HI. OBJECTIVE: Evaluate the implantation of the central venous access line. METHOD: It is a private 348-bed, tertiary hospital with 62 beds in the Adult Intensive Care Unit (ICU). Monitoring of invasive devices began in August 2015. After analyzing the IPCS data, incidence density in 2015 was 2.5 x 1000 CVC-day. Failure in the bundle of maintenance and insertion of catheters and identified need for improvement of hospital medical materials were evidenced. After discussion of the data an action plan was implemented in order to maintain the same pattern of care with the catheter in all the sectors where it could be installed or maintained.The team was trained in hand hygiene and prevention of IPCS, implantation of impregnated CVC, alteration of the PICC model, introduction of taurolidine, implantation of the bundle of insertion of CVC in the Surgical and Hemodynamic Center, and maintenance in Clinical Medical Surgery, Revision of the protocol of preventive measures and training with validation of catheter maintenance. RESULTS: In 2015 the IPCS incidence density laboratory with CVC was 2.5 x 1000 CVC-day, in 2016 the density of ICSL with CVC was 0.9 x 1000 CVC-day. CONCLUSION: The implantation of the CVC care line aiming at the prevention of CHF achieved good results by reducing the density of CHF with CVC.

[112]
Use of adenosine triphosphate bioluminescence to determine cleaning routine of wheelchairs in Brazil

JULIANA ALMEIDA NUNES; DAIANE PATRICIA CAES; ROBERTO LOPES SILVA; SARITA SCORZONI LESSA; BIANCA GRASSI MIRANDA; MARIA LUISA NASCIMENTO MOURA; LANUZA PRADO GIL SOARES; ANALU MANCINI COSTA

HOSPITAL SAMARTINO, SÃO PAULO, BRAZIL.

Background: Wheelchairs are complex equipment that come in contact with individuals and may constitute a reservoir of pathogenic bacteria. Their cleaning may not optimally performed between patients. We aim to evaluate the usefulness of an adenosine triphosphate (ATP) bioluminescence assay for determine the periodicity of wheelchair terminal cleaning in a 300-bed private hospital in São Paulo, Brazil. Methods: In December/2016, we chose one wheelchair routinely used to transport patients between different hospital locations and immediately after its manual terminal cleaning (D0) with disposable cloths and quaternary ammonium compound, we evaluated the effectiveness of cleaning using ATP bioluminescence testing. Four points were selected for this evaluation: cushion, backrest, patient's handles and transporter handles. This evaluation was repeated daily, for 05 consecutive days, and relative light units (RLU) < 500 were considered "acceptable". During this period, wheelchair was labeled with a cleaning date tag and transporters had the cleaning recommendation after isolation patient's transportation or if it was visibly dirty or contaminated with blood or body fluids. Results: at D0, ATP values for backrest, cushing, patient's handles and transporter handles were, respectively, 16,26,56 e 16 RLUs. Values had been increasing progressively in the coming days and at D3, they were 377, 687, 1721 and 1328 respectively. At D5 (last day), we found the following values: backrest=450; cushing=720; patient's handles=3865 and transporter handles=2356. The point with the greatest RLU value was patient's handles, probably because it is areas often touch by the patient. It should be noted that there was no need for cleaning during the evaluation period. Conclusions: Use of ATP bioluminescence has been proposed as means to improve the management of hospital cleaning. Use of benchmark values can help healthcare services to determine the optimal cleaning and disinfection routine.

[113]
Assessing the patient perception about hand hygiene: a step toward patient safety and empowerment

JULIANA ALMEIDA NUNES; DAIANE PATRICIA CAES; SARITA SCORZONI LESSA; MARIA LUISA NASCIMENTO MOURA; BIANCA GRASSI MIRANDA; LANUZA PRADO GIL SOARES; ANALU MANCINI COSTA; GABRIELA ODDONE COITO

HOSPITAL SAMARTINO, SÃO PAULO, BRAZIL.

Background: Despite continued efforts on staff education and availability of alcoholic preparations, hand hygiene (HH) adhesion rates remain poor. One of the new strategies suggested for successful promotion of HH is ensure patient empowerment (PE), defined as "the process that allows the patients to gain the knowledge, skills, and attitude needed to make choices about their care". The aim of this study was to evaluate the feasibility of this strategy as part of multimodal program to improve HH. Methods: We performed an interviewer-administered survey to assess HH knowledge and intentions regarding PE among hospitalized patients in a 300-bed private hospital in Brazil. Infection Control Nurses evaluated orientation received by patients about HH at hospital admission; if they recognize the importance of HH for their recovery; if they were aware if healthcare worker (HCW) had performed HH and if they would feel comfortable to ask HCW to perform HH. Results: Seven hundred and forty-seven patients were interviewed from June/2015 to December/2016. Almost all patients (99.9%) recognize hand hygiene, but only 64% said they feel comfortable to ask HCW to perform HH. Patients and family members relatives who said that remind HCW to clean their hands, 45% are over 65 years old, 84% are between 40 and 50 years old and 67% are between 20 and 30 years old. The level of education found in this group was 65% higher level, 64% high school and 48% elementary school. Conclusion: Patients and relatives understand the importance of HH and demonstrate willingness to be empowered, but do not feel comfortable to ask HCW about HH compliance. The ability to ask HCW to perform HH when indicated is related to young age and to highest levels of education.

[114]
Estimating costs of treatment of bloodstream infections.

MARIA NAZARE KAHWAGE DAVID; LEANDRO DEFACIO; JULIANA DIAZ SIEBRA; ALINE APARECIDA CARNEIRO SOUZA; JOSE JAIR JAMES ARRUDA PINTO; REGIA DAMOUS FEIJO

HOSPITAL SÃO LUIZ - UNIDADE ITAIM, SÃO PAULO, BRAZIL.

Introduction: Bloodstream infection associated with a central venous catheter (ICS-CVC) is associated with unfavorable outcomes, especially in our country, considering that most of these infections are caused by gram negative agents. In Brazil, few studies correlate the cost of infections, but it is estimated that it ranges from US $ 7,906 to US $ 100,000 per episode and in the US, the additional cost per event can reach US $ 39,000. OBJECTIVES: To estimate the costs of antimicrobial treatment of patients with Diagnosis of ICS-CVC. Methodology: This is a retrospective study in patients with a diagnosis of ICS-CVC in the UTIA from 01/01/2016 to 12/31/2016 in a private hospital with 398 tertiary beds in the city The cost of ICS-CVC antimicrobial treatment was collected in the electronic medical record and selected patients were identified from the ICS-CVC notification by the Hospital Infection Control Service (ICSI), from Date of ICS-CVC notification and start of antimicrobial treatment. Result: In the studied population the costs of the antibiotics used and the inputs Dilution and administration, equipment and accessories, syringes and needles) required for its administration. The mean duration of treatment was 9.83 days and the mean direct cost per patient with the use of antimicrobials for the treatment of ICS-CVC was R $ 17,963.38 per event. Conclusion: The prevention of ICS-CVC Should always be SCIH's priority because treatment costs can reach high values. A limitation of our work was to evaluate only the cost of the direct treatment of the ICS-CVC, knowing that if we consider the costs of day bed, team workload and materials used these values would be much higher.

[116]
Infection prevention & control committees in São Paulo state: perspective from nursing council audit

LUIZ CARLOS RIBEIRO LAMBLET[1]; MARIA CLARA PADOVEZE[2]

1.THE SÃO PAULO NURSING COUNCIL; 2. SCHOOL OF NURSING, UNIVERSITY OF SÃO PAULO, BRAZIL.

Introduction: The São Paulo Nursing Council has the authority to audit all nursing activities, including those related to infection prevention and control. This activity can be a source of reliable information to understand the current situation regarding the role of nurses as well the overall performance of the Infection Prevention and Control Committees (IPCC) in the State. Aims: To characterize the IPCC and the role of nurses at hospitals in the State of São Paulo, having as the framework the Brazilian Federal and State regulation. Methods: Cross-sectional, descriptive, and exploratory study by using secondary data from the São Paulo Nursing Council database from September 2012 to January 2017. Official consent was obtained from the S. Paulo Nurses Council and as well approval by the ethics research committee. Data were collected by means of a standardized form and descriptive analysis was performed. Results: Reports from all of the healthcare settings classified as hospitals (n=839) in the state of São Paulo were evaluated. Among the assessed hospitals, 777 (92.61%) have an IPCC, though in 318 institutions (40.92%), the infection control nurse was not full-time dedicated to infection prevention and control activities. Among the small-size hospitals (≤ 50 beds; n=321), 53 were found not to have a IPCC, and 186 had nursing teams who performed other highly demanding activities such as management, and direct care of patients (57.94%) . This is not in agreement with the state law which requires a full-time dedicate infection control nurse. Conclusions: The lack of compliance to legal requirements on human resources suggests that the infection prevention structure is still deficient in many hospitals the State of São Paulo. This can lead to failures in the effective implementation of prevention measures. Audits, such as the Nursing Council, play their role and can be part of a governmental broad strategy to achieve improvements.

[117]
Epidemiology of *Clostridium difficile* in a private hospital in São Paulo: retrospective analysis

DIANA HILDA TEIXEIRA DE FRANÇA; RAISA BEATRICE MOURÃO NOVO; JOAN PINTON TOMARELI; KAROLINE MELLO GAMA; MARCELLE GONÇALVES DA ROCHA; GLAUCIA FERNANDA VARKULJA

HOSPITAL SANTA CATARINA, SÃO PAULO, BRAZIL.

Introduction/Objective: *Clostridium difficile* (CD) is a Gram-positive anaerobic bacterium, spore-forming bacillus present in intestinal microbiota, producer of pathogenic toxins, is considered the primary cause of pseudomembranous colitis and severe diarrhea, leading to megacolon, sepsis and death. It is associated with the use of antimicrobials, and is responsible for 36.000 hospitalizations, an annual cost of three billion dollars. It had become a challenge for public health due to its transmission through the ingestion of spores by contamination of the environment or the hands of healthcare professionals . There are few national data on the epidemiology of this pathogen even in large university hospitals, reinforcing the objective of analyzing the CD epidemiology in a private hospital in São Paulo. Interventions: A retrospective analysis of positive clinical assay was performed between January 2015 and December 2016, based on a review of the database of the Hospital Infection Control Service of Hospital Santa Catarina. To investigate toxins A and B, the immunoenzymatic assay was used using monoclonal antibodies antitoxins A and B of CD. Results: Of 56 assay 30 (53%) were classified as nosocomial infection. There was an annual incidence of 10,000 patients- day of 1.51/105 and 1.98/105, the predominant female sex was 61% and 64%, respectively, the mean age was 83 years and prevalence of infections of 30% in Intensive Care Units in 2015 and 47% in the Medical-surgical Clinic in 2016. Conclusion: The study of the CD in hospitalized patient samples makes it possible to know the profile of CD infections, in favor of a standardization of strategies to reduce the risk of diagnosis by early diagnosis, use of precautions and isolation and cleaning of the environment, hygiene of the hands , Epidemiological surveillance and regulation of antimicrobial prescription, minimizing unfavorable outcomes such as increased hospitalization time, costs, morbidity and mortality.

[118]
Hand hygiene campaign in a private hospital in São Paulo: an unconventional approach

RAISA BEATRICE NOVO; JOAN PINTON TOMALERI; KAROLINE MELLO GAMA; MARCELLE GONÇALVES ROCHA; DIANA HILDA TEIXEIRA FRANÇA; GLAUCIA FERNANDA VARKULJA

HOSPITAL SANTA CATARINA, SÃO PAULO, BRAZIL.

Background:As part of the first global challenge for patient safety (clean care is safer care), the World Health Organization (WHO) annually promotes the worldwide campaign SAVE LIVES:Clean Your Hands. Santa Catarina Hospital is one to participate of this movement. In 2016, in order to evoke in our professionals the purpose behind the action of hand hygiene, the infection control service elaborated a poetic approach campaign that could unfold in other actions beyond May.Interventions:During the month of May, the exhibition "See your hands" was mounted in the main lobby, where professionals and patients daily pass through. Fifteen images of crucial moments to the success of the patient outcome portraying the clean care were chosen.The managers of each area involved were invited to suggest someone which represented a commitment to the cause of safe care.Ordinary actions were portrayed, capable of being contemplated by their executors and patients.In parallel, a 1-minute video of children playing with ink interspersed with a WHO video reinforced the message that hands can mark.The exhibition also featured a banner with a manifesto for safe care and people were invited to sign a visitation and a commitment book.Results:Comparing first and second semesters, there was an increase in alcohol consumption from 50 ml to 76 ml/patient-day.The images are still used as 'talking walls', arranged periodically in different sectors.Median adherence by direct observation maintained at 70% in the period.Conclusion:Although it is not possible to directly attribute the increased consumption of alcoholic product to the campaign alone, we believe that the it contributed and still does to better results and team engagement.Enabling an action that allowed reflection on purpose in care was remarkable.Encouraging unconventional approaches to patient and professional involvement can be a way to sustain efforts to improve adherence to hand hygiene and patient safety at the institution.

[119]
Using world health organization multimodal strategy in a private hospital in São Paulo

GLAUCIA FERNANDA VARKULJA; JOAN PINTON TOMALERI; RAISA BEATRICE MOURÃO NOVO; KAROLINE MELLO GAMA; MARCELLE GONÇALVES DA ROCHA; DIANA HILDA TEIXEIRA DE FRANÇA

HOSPITAL SANTA CATARINA, SÃO PAULO, BRAZIL.

Introduction: The World Health Organization (WHO) launched the Global Alliance for Patient Safety in 2004 and in 2005 its first global challenge: clean care is safer care, saving lives by means of hand hygiene. In order to facilitate the construction of improvements in hand hygiene practices, the multimodal strategy that had been validated in different scenarios allows healthcare services to organize their actions to achieve their objectives and sustain results that had direct impact in patient safety. Interventions: Based on the self-assessment framework completed annually since 2013 by the Infection Control Service team of Hospital Santa Catarina, and a reflection on each of the five critical components of the multimodal strategy (system change, training and education, evaluation and feedback, reminders in the workplace and institutional safety climate for hand hygiene) it was possible to make action plans that were revised each year, listing priorities to create institutional maturity to improve hand hygiene practices, prevent infections and deaths. Based on the score achieved we could be assigned to one of four levels of hand hygiene promotion and practice: inadequate, basic, intermediate and advanced. Results: From 2013 to 2016 it was evidenced a significant improvement in hand hygiene practices. The hospital was first assigned as basic level (190 points) and progressively (245, 325, 390 points) reached the advanced level. It was a grateful surprise to find ourselves as a leader ship institution. The greatest progress was in evaluation and feedback, reminders in the areas of work and safety climate. There were sustained increases in both alcohol consumption and hand hygiene observational adherence, as well as a fall in rates of healthcare associated infection and multidrug resistance. Conclusion: The WHO multimodal strategy was instrumental in organizing actions that culminated in the institutional increased maturity, with sustained patient safety outcomes.

[122]
Is the precaution for neutropenic patients effective? A cohort study

NATALIA BARROS CARVALHO; LUCIA GARCIA DANTAS MARTINS SILVA; PAULO VICTOR NASCIMENTO

SANTOS DUMONT HOSPITAL, SÃO PAULO STATE, BRAZIL.

Introduction: Reverse isolation as a way to avoid infection in immunocompromised patients was abdicated a few years ago by the Center for Disease Control (CDC), due to the lack scientific evidence to maintain this practice. Objective: The aim this work was to evaluate the efficacy of neutropenic precautions in colonization by multi-drug resistant microorganisms (MDRO). Method: A prospective and non-randomized cohort study in which 27 onco-hematologic patients were followed for 8 months in highly complex hospital, in inner Sao Paulo State. The follow-up was performed through a spreadsheet and the following data were computed: Patient identification, age, onco-hematologic diagnosis, comorbidities, history of having been admitted to another health institution, and the following dates: Admission, start and end neutropenia, start and end of the precaution for neutropenic, discharge or death. For identification the patients regarding colonization by MDRO, cultures were collected through skin swabs with "Z" technique with pre-determined periodicity. Continuous variables were assessed by the Mann-Whitney U test and the discrete variables by Pearson's χ^2 or by Fisher's exact test, when indicated. Result: They presented isolation for some MDRO 6 patients (22%). The appropriate institution precaution for neutropenic-day was 84.1%. Only the variable time outside the precaution showed statistical relation with the colonization. In the analysis of survival here understood with free time of colonization, it was shown, through the Kaplan-Meyer curve difference with statistical significance between the curves of the patients submitted, the precautions for neutropenic and those not submitted, being favorable to the group submitted to the precaution. Conclusion: Despite the fragility of the model, this study evidence in favor of the precautions for neutropenic instituted in onco-hematologic patients in the periods of neutropenia reduce the probability of colonization by MDR.

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Prevalence of colonization by *Staphylococcus aureus* and MRSA in insulin-dependent diabetics

NATHALIA BIBIANA TEIXEIRA[1]; THAIS ALINE MONTEIRO PEREIRA[2]; MATHEUS CRISTOVAM DE SOUZA[2]; CARLOS MAGNO CASTELO BRANCO FORTALEZA[1]; MARIA DE LOURDES RIBEIRO DE SOUZA DA CUNHA[1,2]

1. FACULDADE DE MEDICINA DE BOTUCATU; 2. INSTITUTO DE BIOCIÊNCIAS DE BOTUCATU, SÃO PAULO STATE, BRAZIL.

introduction: Staphylococcus aureus is the main cause of hospital and community infections, as well as colonize healthy people asymptomatically. the prevalence of S. aureus carriers varies according to the population studied. individuals who make continuous use of needles, such as insulin users, have a higher colonization rate than other individuals. objectives: to determine the prevalence of colonization of S. aureus and methicillin-resistant S. aureus, MRSA in insulin-dependent diabetic from the community of botucatu, SP, brazil. materials and methods: nasal and oropharyngeal swabs were collected from 185 individuals living in the city of the botucatu, SP, brazil. samples were identified and submitted to polymerase chain reaction (PCR) for detection of the methicillin resistance gene (meca) and identification of the sccmec types by multiplex PCR. results: the prevalence of s. aureus and MRSA were 28.1% (52) and 5.4% (10), respectively. of the MRSA isolates, 7 presented sccmec of type IV, 2 presented sccmec of type II and 1 presented sccmec of type I. discussion: the prevalence of MRSA was higher than that found in healthy people in a population-based study conducted in the same city. although most MRSA isolates have reported community-related sccmec (type IV), isolated sccmec-carrying isolates have also been found to be typically related to health services (types I and II). among the 52 isolates, 23 (44.2%) were from the oral mucosa, 5 (21.7%) of which had the meca gene for resistance to beta-lactamics, a fact that could compromise the control of dissemination of the pathogen, since colonization of the throat may escape routine screening. conclusion: colonization by S. aureus and MRSA is of great relevance for diabetic since they are considered susceptible to severe and persistent infections. the prevalence of MRSA in these individuals reveals a potential for dissemination of resistant isolates among diabetics and a higher risk of developing infections.

[124]
Healthcare-associated infections in a ward for tropical infectious diseases

JONAS ATIQUE ATIQUE SAWAZAKI; DAGMAR APARECIDA EBURNEO RIPOLI; RICARDO DE SOUZA CAVALCANTE; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO, BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Healthcare-associated infections (HCAIs) may affect patients admitted for community-associated infectious diseases. In this setting, the overlapping of clinical pictures may challenge infection control practitioners. We aimed at describing the incidence of HCAIs in a ward for tropical infectious diseases in inner Brazil. METHODS: Prospective surveillance for HCAIs was conducted in the Ward for Infectious and Parasitic Diseases (16 beds) from the teaching hospital of Botucatu School of Medicine from 2014 through 2016. Poisson regression models tested differences in rates for three groups: general infectious diseases (reference group), patients with AIDS, and patients transferred from other specialties (due to shortage of beds in other wards). RESULTS: There were 1,761 admissions in the study period (total 15,981 patient-days). The overall incidence of HCAIs was 5.9 per 1,000 patient-days (cumulative incidence of 5.3%). The incidence of device-associated infections (per 1,000 device-days) was as follows: ventilator-associated pneumonia, 7.3; central-line associated bloodstream infection, 6.0; catheter-associated urinary tract infection, 11.5. The most relevant HCAIs not related to invasive devices had incidence rates (per 1,000 patient-days) of 1.4 (pneumonia), 0.6 (urinary infections), 0.6 (bloodstream infections) and 0.4 (skin infections). AIDS patients had greater incidence of overall HCAIs (IRR=1.54; 95%CI=1.15-2.06) and non-ventilation associated pneumonia (IRR=2.62; 95%CI=1.50-4.57). Incidence rates for patients transferred from other wards did not differ from the reference group. The all-cause mortality in the study cohort was 3.2%, and AIDS patients were more likely to die during admission (RR=2.46; 95%CI=2.25-3.50). CONCLUSIONS: There was relevant incidence of HCAIs in the ward. Patients with AIDS are at greater risk of acquiring HCAIs and of dying than subjects admitted for other infectious diseases.

[125]
Epidemiology, risk factors and outcomes of MDR-bacteria bloodstream infections in HSCT recipients

ALIANA MENESES FERREIRA; THAIS GUIMARÃES; FERNANDA SPADÃO; FLAVIA ROSSI; JESSICA RAMOS; MARJORIE VIEIRA BATISTA; VANDERSON ROCHA; SILVIA FIGUEIREDO COSTA

HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Introduction: Bacterial bloodstream infections (BSI) represent a major complication in the early phase of the hematopoietic stem cell transplant and infections by MDR bacteria have become a concern worldwide. Despite the burden of MDR bacteria in HSCT patients, data regarding risk factors and outcomes are scarce, and the role of colonization by MDR bacteria on BSI and its impact on outcome is controversial. The objective of this report was to study the epidemiology, risk factors and outcomes of bacterial BSI in HSCT recipients. Methods: We evaluated retrospectively the 232 hematopoietic stem cell transplants performed in our center between January 2014 and December 2015. Results: The cumulative incidence of bacterial BSI in the pre-engraftment phase was 26,7% (95%CI, 11-33%) – mostly of them were caused by gram-negative bacteria (55,2% of pathogens isolated) and we found that 40,3% of the BSI were caused by MDR bacteria. Risk factors for bacterial BSI in multivariate analysis were GIT-colonization with MDR bacteria including a gram-negative bacillus and duration of neutropenia > 10 days. Regarding to bloodstream infections caused specifically by MDR bacteria, age > 62 years, total parenteral nutrition need and GIT-colonization by gram-negative MDR bacillus were associated with an increased risk. We found that 40,5% of the patients were GIT-colonized by MDR bacteria, including VRE and/or GNB. Among patients colonized by MDR GNB, around 20% developed an overt BSI by a MDR bacteria with the same pattern of sensitivity. The cumulative incidence of mortality related to infection during hospitalization was 5,6% (95%CI, 3-9). Conclusions: HSCT recipients have a high rate of MDR-bacteria GIT-colonization and also, a significant proportion of them develop BSI caused by gram-negative bacillus MDR, with a causal association. These findings reinforce that efforts to reduce colonization should be attempted to better care for HSCT patients.

[126]

The antimicrobial management to combat *Clostridium difficile* through continuing education strategies

PAULA FERNANDA MARTINELI; FERNANDO GATTI DE MENEZES; MOACYR SILVA JUNIOR; ALEXANDRA DO ROSARIO TONIOLO; PRISCILA GONÇALVES; HELENA MARIA FERNANDES CASTAGNA; LAURA KATAOKA; ANA CAROLINA SANTIAGO

HOSPITAL ISRAELITA ALBERT EINSTEIN, SÃO PAULO, BRAZIL.

Introduction. Clostridium difficile infections is one of the most common healthcare-associated infections and contributes to excess morbidity, mortality and healthcare costs. Antimicrobial stewardship programs have demonstrated success in combating Clostridium difficile, primarily through antibiotic restrictive strategies, but also continuing education programs are effective. Objective. To evaluate the impact of antimicrobial stewardship program in reducing the Clostridium difficile infection rate at Albert Einstein Hospital, based only on nonrestrictive strategies of continuing education. Intervention. The rate of infection by Clostridium difficile reached its historical peak in 2015 with 8.51 cases / 10,000 patients-day, despite adequate environmental control and excellent adhesion to hand hygiene and contact precaution. In 2016, the following educational measures were instituted: preparation of antimicrobial treatment guides; production of five videos, aimed at the clinical staff with the following topics: overview on the rational use of antimicrobials, treatment of Gram-positive bacteria infections, treatment of Gram-negative bacteria infections, treatment of fungal infections, treatment of infection Clostridium difficile; daily discussion with the clinical staff on patients using broad spectrum antibiotics in intensive care units (eg, carbapenems and glycopeptides), performed by the clinical pharmacist and infection controller. Result. In 2016, the Clostridium difficile infections rate was 6.19 cases / 10.000 patients-day, representing a decrease of 27.3% compared to 2015. Conclusion. Nonrestrictive strategies to combat Clostridium difficile infections have been implemented by antimicrobial stewardship programs and have had proven benefit at reducing this infections. More follow-up time will be needed to assess continuing education as a long-term prevention strategy.

[129]
Who's multimodal hand hygiene improvement strategy: an experience at a pediatric hospital

ALDAIZA MARCOS RIBEIRO; FRANCISCA LUZILENE NOGUEIRA DELLAGUARDIA; VIRGINIA MARIA RAMOS SAMPAIO; RIVANIA ANDRADE BARROS; MICHELY PINTO DE OLIVEIRA; JESSICA FEITOSA A PAREDES; DANIELLE ALVES CALÍOPE; MONICA FERNANDES MAGELA

HOSPITAL INFANTIL ALBERT SABIN, STATE OF CEARÁ, BRAZIL.

Patient safety should guide the entire care process. The World Health Organization (WHO) in its Patient Safety Program has as its primary goal the reduction of healthcare associated infection (HAI) around the world. Therefore, it is necessary to improve the Hand Hygiene (HH) practices in health services. The Albert Sabin Children's Hospital is one of the first five Brazilian hospitals to implement the WHO's Multimodal Hand Hygiene Improvement Strategy (WHO-MHHIS), consolidating it and incorporating it into its routine. Objectives: Describe the implementation, consolidation and incorporation of WHO-MHHIS. To evaluate the rates of adherence to HH practices of the professionals and their repercussions on the HAI rates from 2009 to 2016. Method: The methodology used in the implementation followed the recommendations of the original WHO project and started in 3 intensive care units with logistics preparation, training and HH audit before and after intervention. In the consolidation phase, the training and audits of HH were intensified, workshops were promoted, multiplier commissions were formed, among others. With the success of the project there was expansion for all units with incorporation into the hospital routine. HAI was identified through active search. Results: The average annual rates of adherence to HM of the three ICUs for the years 2009, 2010, 2011, 2012, 2013, 2014, 2015 and 2016 were, respectively, 50.8%, 73.8%, 78.8%, 85.8%, 84.6%; 84.3%; 86% and 88.2%. The mean HAI density in the three ICUs before the implementation of the strategy (2008) was 21.3 HAI/ thousand day patients. In 2009, 2010, 2011, 2012, 2013, 2014, 2015 and 2016, were respectively 17.4; 17.8; 12.6; 12.2; 14.4; 12; 14.7 and 13 HAI/ thousand day patients. It should be noted that these indicators were made for all hospital units. Conclusion: Increasing adherence to HH practices and decreasing HAI density during the study period demonstrate the success of this strategy.

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Microbiology of hospital infections and microbial resistance in a pediatric hospital

ALDAIZA MARCOS RIBEIRO; FRANCISCA LUZILENE NOGUEIRA DELLAGUARDIA; VIRGINIA MARIA RAMOS SAMPAIO; RIVANIA ANDRADE BARROS; MICHELY PINTO DE OLIVEIRA; JESSICA FEITOSA A PAREDES; DANIELLE ALVES CALÍOPE; MONICA FERNANDES MAGELA; FÁTIMA MARIA PINHEIRO CASTRO; PORCINA BARRETO FROTA; VLADIA VERUSKA SAMPAIO

HOSPITAL INFANTIL ALBERT SABIN, STATE OF CEARÁ, BRAZIL.

Microbial resistance is one of the major public health problems in the world and constitutes a challenge for the treatment of hospitalized patients. Applications of specific measures for its control are necessary. The surveillance of microorganisms that cause healthcare associated infection and the knowledge of their resistance profiles are necessary conditions for the elaboration of preventive measures. Objective: To know the microbiological profile of Hospital Infections with a focus on antimicrobial resistance. Methodology: Descriptive cross-sectional study, conducted throughout the year 2016 in a pediatric hospital. This is a school hospital, tertiary, exclusively for SUS patients. The microbiology laboratory's own automated. The Infection Control Service performs an active daily search in the laboratory in site and by the intranet. The data were analyzed in the Epi-info program. Results: A total of 1484 strains of patients with nosocomial infection were isolated, with the most frequent being coagulase negative Staphylococcus 545 (36.8%), Pseudomonas aeruginosa 267 (18%), Klebsiella pneumoniae 160 (10.8%), and Candida sp 153 , 3%). 763 (51.4%) of the strains were isolated in blood. K. pneumoniae was more frequent in blood while P. aeruginosa in other specimens. Resistance rates were found for: P. aeruginosa of 38% for Imipenem, 30% for Meropenem, 25% for Cefepime and 17% for Ceftazidime; K. pneumoniae: 64% for Cefepime, 57% for Ceftazidime, 48% for Piperacillin/Tazobactam and 14 and 12% for Imipenem and Meropenem. The resistance of these bacteria to Polimixin were respectively 4% and 1%. 60% of the Klebsiellas are ESBL producers. Only 40 strains (2.7%) of S. aureus were identified, all sensitive to vancomycin, but 37% were resistant to oxacillin. Conclusion: High resistance rates were found for almost all classes of antimicrobials characterizing a worrisome picture of antimicrobial multiresistance.

[131]
Investigation of gram-negative bacteria outbreak associated with haemodialysis: a multidisciplinary approach

MARIA APARECIDA DA SILVA VIEIRA[1]; SUELI LEMES DE ÁVILA ALVES[2]; ZILAH CÂNDIDA PEREIRA NEVES[1]; ELISANGELA EURIPEDES RESENDE GUIMARÃES[1]; CATARINA. ALVES P CAPUCHO[3]; MARIA FÁTIMA COELHO[3]; DAGOBERTO. LUIZ S COSTA[3]

1.PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 2. PUBLIC HEALTH LABORATORY DR. GIOVANNI CYSNEIROS (LACEN-GO); 3. SANITARY SURVEILLANCE DEPARTMENT OF GOIÂNIA MUNICIPALITY, STATE OF GOIÁS, BRAZIL.

Introduction: Glucose non-fermentative Gram-negative bacteria are associated with hemodialysis outbreaks, leading to bacteraemia and pyrogenic reactions. Aim: To describe actions taken by fiscal auditors and Municipal Coordination of Infection Control technicians regarding investigation and control of gram-negative bacteria outbreak associated with haemodialysis treatment. Interventions: Investigation of pyrogenic reaction outbreak in a private haemodialysis unit (36 machines) in Goiânia, Goiás, Brazil. The unit attends to 208 patients in three shifts. Upon inspection, the multidisciplinary team discontinued dialysis procedures and performed some interventions: technical meeting with the staff responsible for haemodialysis; review of patient and nursing records in order to catalogue the cases in a worksheet; review of care protocols, microbiological evaluation of water, dialysate solution and antiseptic solutions and blood culture analysis from patients who presented pyrogenic reactions. The team also established control measures: discarding of used capillaries and blood lines, cleansing of the water tank, replacement of carbon and sand filters and disinfection of reverse osmose membrane, reuse machine and distribution loop with paracetic acid and ozone. Hand hygiene, cleaning and disinfection were reinforced. Results: On 7/4/2016, from 108 dialysis sessions, five pyrogenic reactions occurred (4.6%). On 7/5/2016, 30 pyrogenic reactions occurred out of 36 dialysis sessions (85.7%). Seven of the 35 patients (20.0%) were hospitalised and one of them died. Patient ages ranged from 17 to 84. Biological contaminants were found in water – endotoxin. Two gram-negative bacteria species were isolated: Stenotrophomonas maltophilia (n=8) and Burkholderia cepacia (n=5), which are susceptible only to meropenem. Conclusions: The collaborative work carried out by the multidisciplinary team was central to the disruption and control of the outbreak in this haemodialysis unit.

[132]
The teaching of occupational and patient safety in undergraduate courses in health in Brazil

HELINY CARNEIRO CUNHA NEVES[1]; JÚLIA ALVES CORRÊA SILVA[1]; ELISÂNGELA RODRIGUES BOEIRA[1]; ANACLARA FERREIRA VEIGA TIPPLE[1]; SILVANA LIMA VIEIRA SANTOS[1]; VALÉRIA PAGOTTO[1]; SERGIANE BISINOTO ALVES[2]

1.NURSING FACULTY OF FEDERAL UNIVERSITY OF GOIÁS; 2. PROFESSOR OF SCHOOL OF SOCIAL SCIENCES AND HEALTH, PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: The World Health Organization, through the publication of the Patient safety curriculum guide: multi-professional, recommended that teaching about patient safety should be strengthened in the Pedagogical Projects of Higher Education Institutions of health courses. This educational process must promote the development of skills in the academic, seeking the construction of knowledge related to occupational and the pacient safety. Aim: To characterize the teaching of occupational and paciente safety measures in undergraduate courses in the health area of Brazil. Method: Descriptive study, with a quantitative approach. All private Higher Education Institutions (HEI) registered in the e-MEC system that have undergraduate courses in Nursing, Medicine, Dentistry, Physiotherapy, Psychocology, Occupational Therapy, Nutrition, Pharmacy and Biomedicine were included. Data were collected from HEI sites from September 2016 to February 2017 and analyzed in Stata 12.0 using absolute and relative frequency, mean and standard deviation. Results: 2,843 health courses were identified. Of these, 1798 (63,2%) did not have subjects related to the thematic, with a prevalence of 730 (64,2%) courses in the Southeast region and 428 (61,4%) in the Northeast. Among these courses, stand out: Nursing 249 (40,2%), Medicine 122 (80,2%) and Dentistry 148 (64,5%). The average workload of the subjects were 51.7 hours (± 21.2), minimum workload of 18 hours and maximum of 195. Regarding the contents, there was a predominance of the basic and introductory aspects of Biosafety 496 (17,4%), worker health 276 (9,71%), infectious diseases 87 (9,71%) and patient safety 6 (0,21 %). Conclusions: Occupational and patient safety education is still incipient in private educational institutions. It evidences the vulnerability of academics, the low adherence to preventive measures and need for restructuring of teaching that aims at safety.

[133]

Impact of the multimodal hand hygiene strategy in healthcare-associated infection reduction

LUCIANA RODRIGUES DA SILVA; EMY AKIYAMA GOUVEIA; FLAVIA AZEVEDO ABRANTES; DANIELA BICUDO LOBERTO

HOSPITAL LEFORTE UNIDADE LIBERDADE, SÃO PAULO, BRAZIL.

Background: Hospital acquired infections (HAI) are a major worldwide health problem which complicate and prolong patient's treatment, increase costs and can be life-threatening. Adequate hand hygiene (HH) remains the single most important measure to prevent nosocomial infections and safe patient's life. Objective: To determinate the impact of the multimodal hand hygiene strategy in healthcare-associated infection reduction in a Brazilian academic centre, Hospital Bandeirantes, between 2012 to 2016.Methods: The interventional HH program was performed between 2012 and 2016, following the World Health Organization (WHO) multimodal HH strategy guideline. Initially in 2012 the exchange of the alcoholic preparation of HH. In 2013, alcohol gel dispensers were allocated at patient's bedside according RDC 42/2010 and monitored the daily volume of alcohol gel used in each patient. Furthermore, we developed an annual educational HH workshop with the healthcare workers as well as participation in the epidemiological vigilance centre program "clean hands are safer". In 2014, informative figures of the five-steps HH were allocated at the hospital handwashing sinks. Moreover, instructive and motivational posters with pictures from the healthcare members washing their hands were provided as part of the education annual program. In 2015, healthcare providers HH was inspected in periodic observational surveys and the feedback was provided by the hospital infection control team. In the following year, it was created the HH team to improve the educational HH program. Results: At the beginning of the interventional multimodal HH program, the HAI rate was 1,47%. After the multimodal strategy we observed a reduction of HAI in each year reaching 2016 at a rate of 0.92%.Between 2012 and 2016, we observed a 37% reduction in the HAI rate in our centre after the implementation of the multimodal HH strategy. Conclusion: The multimodal HH strategy is feasible and effective in HAI reduction.

[134]
Assessment of an intervention aimed at early discontinuation of intravenous antimicrobial therapy

GISLAINE FERRARESI BONELLA; ASTRÍDIA MARÍLIA DE SOUZA FONTES; MIGUEL TANÚS JORGE; ALEXANDRE BARCELOS MORAIS DA SILVEIRA

FEDERAL UNIVERSITY OF UBERLÂNDIA, STATE OF MINAS GERAIS, BRAZIL.

Many interventions demonstrate success in adapting the duration of intravenous antibiotic therapy, but few studies have been conducted in developing countries. The aim of this study was to evaluate the effectiveness of an intervention in the induction of early discontinuation of intravenous antimicrobial therapy and/or its switch to oral therapy. The study employed a before–after intervention design that consisted of displaying a message in the computerized prescription on the third day and suspension of the prescription on the fifth day of intravenous antimicrobial therapy. A total of 465 patients were followed during the control period (CP) and 440 in the intervention period (IP). The intravenous therapy was switched to oral therapy for 11 (2.4%) patients during the CP and 25 (5.7%) in the IP (p = 0.011), and was discontinued for 82 (17.6%) patients during the CP and 106 (24.1%) in the IP (p = 0.017). During the IP there was a significant increase of patients who had their antimicrobial treatment discontinued before the seventh day of intravenous treatment, 37.40% (49/131) in the IP and 16.13% (15/93) in the CP (p = 0.0005). The duration of intravenous antimicrobial therapy decreased by one day, but it was not significant (p = 0.136). It is concluded that the proposed intervention is effective in promoting the early discontinuation of antimicrobial treatment and/or switch to oral therapy. As long as a computerized system for prescription already exists, it is easy and inexpensive to be implemented, especially in hospitals in developing countries. *Article published in the Brazilian Journal of Infectious Diseases. Bonella GF, Fontes AM, Jorge MT, Silveira ABM. Assessment of an intervention aimed at early discontinuation of intravenous antimicrobial therapy in a Brazilian University hospital. Braz J Infect Dis. 2016 Sep-Oct;20(5):462-7. doi: 10.1016/j.bjid.2016.07.002. Epub 2016 Aug 8.

[135]

Assessment of cleaning process of the flexible intramedullary bone used in orthopedic surgeries

RAFAELA APARECIDA PRATA; ANA LÚCIA GREGÓRIO TAVARES; IONE CORRÊA

UNIVERSIDADE ESTADUAL PAULISTA (UNESP), BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction: The control of infection related to health care is closely conected to the cleaning equipment / products of health. The flexible bone is an instrument of greater complexity being a potential risk of the infection. Objective: Assessment the cleaning of flexible bone used in orthopedic surgery. Methods: This is an Assessment research under the quantitative approach with the cleaning of flexibling intramedullary bone after the surgical procedure. The sample used for the study was 180 bone divided into three cleaning groups: Group I (manual cleaning, ultrasonic washing with enzymatic detergent according to the unit routine) Group II (manual cleaning, ultrasonic cleaning and thermodesinfector with enzymatic detergent immediately after the surgery) And Group III (manual cleaning, ultrasonic and thermodesinfector with the peroxide of hydrogen 3% immediately after the surgery). The test for the detection of protein and adenosine triphosphate was used in order to evaluate the cleaning. It was adopted like the cleaning parameter the recovery of up to 200 units related to the light (RLU).Results and discussion: In group I, according to the routine of the unit, cleaning of the bones was necessary eleven reprocessing in the ultrasonic washer and manual cleaning. In group II there was a decrease of three reprocessing. Group III presented a significant reduction in reprocessing, around 1 to 2 times, still with the presence of residue. While the cleaning of the washer disinfector, there was only a reprocessing of the cleaning and rare bones showed residue. Conclusion: It was concluded that the cleaning procedures of the proposed flexible milling bone do not provide the reuse, because it presents several risk factors due to its complexity. It is recommended that the managers and other professionals do the reflection related to the quality of the safe care.

[136]

Inpatients´ use of oral antimicrobials in small hospitals: the impact of stewardship items.

JULIA LAURINDO GIACOMINI; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO (UNESP), BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: In a previous study, we addressed the use of parenteral antimicrobials in small hospitals in inner Brazil. However, oral antimicrobials (OA) are often used in those settings, and they also may impact on the emergence and spread of resistant organisms. The objective of the present study was to identify the impact of antimicrobial stewardship items on the use of OA in small hospitals. METHODS: The 60-day use of antimicrobials was collected in visits to 48 hospitals with up to 50 beds in inner São Paulo State, Brazil. We tested the impact of six "stewardship items" on the use of OA: (1) Infection Control Committee (ICC); (2) infectious diseases (ID) specialist; (3) existence of local antimicrobial guidelines; (4) regular trainings for doctors; (5) restrictive control of antimicrobial use; (6) existence of a reference microbiology laboratory. Negative binomial regression models were adjusted for hospital characteristics and for socio-economic data from the city in which they were located. RESULTS: The overall use of antimicrobials was 286.7 Defined Daily Doses (DDD) per 100 admissions, and 45.58 (15.9%) corresponded to oral agents. The proportion of use of oral antimicrobials in individual hospitals ranged from 0 to 72.6%. The most commonly used OA were macrolides (14.60 DDD per 100 admissions), quinolones (10.73) and first generation cephalosporins (5.40). Among stewardship items, trainings for doctors (adjusted RR, 0.24; 95%CI, 0.07-0.81; P=0.02) and restrictive control (adjusted RR, 0.25; 95%CI, 0.09-0.73; P=0.01) were associated with lesser OA use. When included in multivariable models, the total number on stewardship items presented similar association (adjusted RR, 0.70; 95%CI, 0.50-0.98; P=0.04). CONCLUSIONS: Antimicrobial stewardship items in small hospitals can reduce the use of OA. Results are similar to those obtained for parenteral antimicrobials.

[138]
Rational use of gloves, we do?

VANESSA GRASSMANN; EVELIN AMARAL RAMOS; ANA MARIA EMILIANO DE CASTRO; EMÍLIO LOPES JÚNIOR; LOURDES DAS NEVES MIRANDA

GENERAL HOSPITAL OF ITAPECERICA DA SERRA, SÃO PAULO STATE, BRAZIL.

Introduction: The gloves make up the arsenal of personal protection equipment (PPE), whose primary purpose is to protect health professionals from exposure to blood or other body fluids. However according to publications, health workers wear gloves when they are not indicated, and this practice negatively interferes with adherence to hand hygiene. Objective: Our aim is to know the practice of health professionals (doctors and nursing) in situations that do not require the use of gloves in a pediatric intensive care unit at a community hospital in the metropolitan area of São Paulo. Intervention: Observational evaluation from September to October 2016 by a trained trainee. An instrument was used with the list of procedures without indication of the use of gloves previously defined with the unit manager. Results: A total of 211 procedures opportunities were evaluated without indication of glove use, with overall compliance of 77%. The adhesions for items evaluated were: closure of trash box for disposal of perforating-cutting material (100%), preparation of intravenous drugs (100%), evaluation of vital signs (92%), opening of materials for procedures (84%), change of decubitus (83%), inhalation (73%), administration of oral and gavage medications (58%), physical examination (53%), assistance in collection of exams and changing dressings (50%) and transport of patients (17%). Conclusions: Significant adhesion was considered, however, it was not homogeneous. We observed low compliance in physical examination and patient transport. We have shown that health professionals have doubts about when gloves are needed, and there is a need to reinforce that there are clinical situations in which glove use is not indicated. References: - Divisão de Infecção Hospitalar/Centro de Vigilância Epidemiológica/Secretaria de Estado da Saúde de São Paulo. Recomendações sobre o uso de luvas em serviços de saúde. 2016. - World Health Organization. Gloves use information leaflet. 2009.

[139]
Retrospective analysis on *Bordetella pertussis* in children: two municipalities of interior-SP/Brazil

RAFAELA APARECIDA PRATA, LÍVIA FARIA ORSO, PAULA FERNANDES CHADI, IONE CORRÊA

UNIVERSIDADE ESTADUAL PAULISTA (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction: Pertussis is a disease that has been part of the National List of Diseases of Compulsory Notification in Brazil since 2001. Despite the efforts made by the National Immunization Program (PNI), it is estimated that 20 to 50 million cases Of pertussis, with approximately 200 to 400 thousand deaths, the majority in infants who were not vaccinated or incomplete vaccination. Objectives: To investigate the epidemiological profile of pertussis cases in children aged 0 to 4 years old in two municipalities in the interior of the State of São Paulo. Methods: Epidemiological study, descriptive in historical and comparative series. We analyzed data on children between 0 and 4 years of age who were notified with pertussis by National Notification System (SINAN) databases from January 2008 to October 31, 2014 in the cities of Botucatu and Marília. The study involved descriptive analysis of information through frequency distribution, measures of central tendency, variability and graphs. Approved by COMAP de Marília with opinions: 1,047,509 and 1,477,007. Being the period of data collection from April to December 2016. Results: Confirmed pertussis cases increased gradually from 2011, most cases occurred in the spring and summer. The age group most affected by the disease were children under one year of age, and most of the confirmed cases were residents of other municipalities of the Regional Health Department of Botucatu and Marília. Most of the children were vaccinated and of the confirmed cases the majority presented complications of the disease. And most of the confirmed cases prognostic evolution was for the cure. Conclusions: There are still major challenges for national vaccination programs to adapt vaccination schedules according to the current epidemiological scenario, as well as to implement more effective prevention, notification and control strategies.

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Public policies on healthcare associated infections: a case study of three countries

CASSIMIRO NOGUEIRA JUNIOR; MARIA CLARA PADOVEZE

SCHOOL OF NURSING, UNIVERSITY OF SÃO PAULO, SÃO PAULO, BRAZIL.

Introduction: Healthcare associated infections (HAIs) impact negatively public health. Some countries have been successful in the implementation of public policies for dealing with HAIs. However, the factors that underpin this success is not fully understood. Aim: To analyze the development of public policies of HAIs in countries with different cultural context: Brazil, Chile and Israel. Methods: Qualitative, prospective, case study method based on the Health Policy Triangle (HPT) framework. Countries were selected based on the existence of a national program with successful initiatives. Data collection were performed in two parallel phases: a document analysis and program's headquarters visitings along qualitative interviews with team members. Data analysis combined comparative-descriptive and analytical-descriptive methods. Results: The origin and the consolidation of public policy varied: 1) Brazil: about 30 years, political crisis and death of a president forced the first actions, but did not consolidate them. With slow trend, the program gained major structure since 2000; 2) Chile: about 35 years; outbreaks gave visibility to the problem, leading to the initiative of the program. Gradually strategic actions were implemented, consolidating the policy; 3) Israel: about ten years, the program resulted from the mobilization of professionals to control outbreaks. Prompt actions led to the consolidation of policies. HPT framework pointed out in-common elements in these countries: generators of need, strength, and support as well the key role of political sponsors. Main success factors: engagement of professionals and technical training programmes at the national and local levels; recognition and adaptation to regional differences and alignment between levels of government. Conclusion: Despite cultural-historical differences, countries have in-common pivotal elements for success. The acknowledgment of these key-elements may help programs that are still incipient.

[142]
Systematic review on the profile of major microbial resistant circulating agents

DANIELLA CRISTINA RODRIGUES PEREIRA; ANA CAROLINA ESTEVES DA SILVA PEREIRA; JULIANA DA MOTTA GIRARDI; FLÁVIA TAVARES SILVA ELIAS

OSWALDO CRUZ FOUNDATION, BRAZIL.

Health systems are constantly challenged by hospital-acquired infection (HAI). They are emerging as one of the greatest challenges for health services today, due to the growing number of Gram-positive and Gram-negative bacteria that cause HAI, previously not considered important. This situation has changed in the last decades, because scientific advances have brought an increase of life expectancy. Patients with advanced age and chronic diseases are more susceptible to infectious diseases due to reduced efficacy of cellular and humoral immunity over time. These health conditions associated with hospitalization practices and the extensive and inadequate use of antimicrobials, have triggered a growing development of multiresistant microorganisms in recent years. The scope of this study will be to accomplish a systematic review, adapting the methodology of the Cochrane Collaboration, to know the scientific evidences about the susceptibility profile, virulence, and mechanisms of resistance to the antimicrobial agents of the most frequently microorganisms notified as etiological agents of HAI in Brazil in adult patients in Intensive Care Units (ICU): *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter baumannii* and *Pseudomonas aeruginosa*. Searches were made in April 2017 in Pub Med, Embase, Cochrane Library - Central, Web of Science, Scopus, Virtual Health Library. The following terms used were: Intensive Care Units, hospital-acquired infection, *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Acinetobacter*, *Pseudomonas aeruginosa*. Terms were adapted if necessary and prioritized the last twenty years studies. The results identified were: Pub Med 68 studies; Embase 7 studies; Cochrane Library - Central 121 studies; Web of Science 103 studies; And Virtual Health Library 93 studies. This review will make it possible to target interventions for the control of cross infections and will contribute to minimizing the early use of broad spectrum antimicrobial therapy.

[143]
Multi-resistant germ profile isolated in intensive therapy unity in a public hospital

PRISCILA DO NASCIMENTO CORDEIRO DE ALMEIDA; JOSIANE MACEDO DE OLIVEIRA; TASSIA GISLEINE PEREIRA SOARES; ERICA DO SOCORRO OLIVEIRA SOUZA

HOSPITAL OPHIR LOYOLA, STATE OF PARÁ, BRAZIL.

INTRODUCTION: Multi-resistant germs are commonly identified as causing Healthcare-Associated Infection (HAI). Patients admitted to the Intensive Care Unit (ICU) are more likely to acquire HAIs, as they are exposed to various risk factors and invasive procedures. Gram-negative bacilli are the main problems due to the high antimicrobial resistance rates. Knowledge of germs is of major importance for the adoption of preventive measures. OBJECTIVE: To identify multi-resistant microorganisms isolated in the ICU of a public oncology hospital in Belém / PA in the year 2014. METHOD: This is a descriptive and retrospective survey 49 cultures were analyzed and classified by the Hospital Infection Control Committee (HICC), from several topographies in surgical and clinical ICUs. OUTCOME: The highest percentage of isolated multidrug germs was A. baumannii (34.69%), followed by P. aeruginosa (28.58%), E. coli (18.37%), K. pneumoniae (10.2%) and Enterobacter sp and S. marcescens, both with 4.08%. Regarding the classification of these germs, it was evident that 59.19% were by HAIs, 30.61% by colonization, 6.12% by Other Hospital Infection (OHI) and 2.04% by Community Infection (CI) 2.04%. CONCLUSION: The study showed a profile of gram-negative bacteria especially Acinetobacter baumannii, characteristic of hospital environment and one of the main causes of HAIs in ICU, and regarding the classification of germs, more than 50% due to HAIs. The research demonstrates the need to invest in the process of continuous education of multiprofessional teams, emphasizing the importance of environmental hygiene, materials and equipment, isolation methods, treatment of patients with multiresistant infection and hand hygiene for prevention and control of HAIs. Keywords: Bacterial drug resistance; Hospital infection; Intensive Care Units.

[144]
Vaccine situation against hepatitis b among community health agents of the city of Goiânia-GO

TAUANA SOUZA AMARAL[1]; FABIANA RIBEIRO REZENDE[1]; CLERY MARIANO DA SILVA ALVES[2]; NAJARA QUEIROZ CARDOSO[1]; ADENICIA CUSTÓDIA SILVA E SOUSA[3]; ANACLARA FERREIRA VEIGA TIPPLE[1]

1.UNIVERSITY FEDERAL OF GOIÁS; 2.UNIVERSITY ESTÁCIO OF SÁ; 3.PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: The hepatitis B virus (HBV) is one of the main pathogen bound by blood and the daily exposure of Health Care Workers(HCW) to this fluid puts this group at risk for acquire HBV. Thus, immunization against HBV is one of the preventive measures strongly recommended to HCW and there are few investigations over some categories professionals, as Community Health Agents(CHA). Objectives: The study aimed describe vaccine status against HBV; identify if CHA received information over vaccine against HBV. Method: Cross-sectional and descriptive study performed with CHA in Family Health Center of the city of Goiânia-GO. All the CHA in the exercise of their functions in the period from August to December 2015 were invited . The data were obtained through a self-administered questionnaire and by the verification of the vaccine card. Only the vaccination referred was considered when the card wasn't presented after three attempts. Statistical analyses were developed in SPSS® version 21.0 for Windows. Results: Of overall of 89 CHA in action no Sanitary District, 80 participated of the study, of these 54 reported that they received guidance on the vaccine before starting work as CHA, 60,0% presented the card for verification. The majority received the vaccine, being that 66(82,5%) received three doses, five(6,3%) two doses, one(1,3%) a dose and three(3,8%) didn't reported. The reasons cited for incompleteness of the scheme were forgetfulness, carelessness and lack of need. Anti-HBs were performed by 24 (30.0%) CHA and of these 21 (87.5%) confirmed immunity. Conclusions: Failures were observed in the orientation of CHA about vaccination, indicating employer negligence. Despite of high vaccination rate among CHA, few performed anti-HBs and can be vulnerable to developing the infection. It is suggested that the employer make a commitment with the safety of the professional and that, like the vaccine, the anti-HBs be free and the worker oriented about achievement of the exam.

[145]
Implementation of the who multimodal hand hygiene improvement strategy in a private hospital

VIVIANE CRISTINA CAETANO NASCIMENTO[1]; ISABELLA BARBOSA CLEINMAN[1]; DEBORA MAYANE DE CARVALHO PESTANA MIGUEL[1]; ANA LUCIA SENNA DA CUNHA GRAÇA[1]; MONICA GUEDES RODRIGUES[1]; MARCIA GARNICA[2]; CLAUDIA ADELINO ESPANHA[1]

1.HOSPITAL UNIMED RIO; 2.HOSPITAL UNIVERSITARIO CLEMENTINO FRAGA FILHO, RIO DE JANEIRO, BRAZIL.

Introduction/Objectives: The World Health Organization (WHO) multimodal hand hygiene (HH) improvement strategy was developed to support health facilities to improve HH compliance and reduce health care associated infections. This study occurred between May 2015 and March 2017 and aimed to measure the impact of this WHO strategy in HH compliance by health care workers at the intensive care unit (ICU) and step down ICU of a private hospital. Interventions: The infection control team developed the following actions: (1) review of alcohol-based hand rub dispensers points and repair of the damaged ones, (2) HH training practices for all new health care workers, (3) recruitment of staff team leaders to support HH compliance, (4) institutional HH campaign twice a year, (5) monitoring HH compliance and immediate feedback to the observed health care worker, (6) engaging patients and visitors in monitoring HH. Results: Between May 2015 and June 2016, the infection control team had performed 1607 observations of HH opportunities before patient contact and 1589 after patient contact. The HH compliance rate was 40% (n=648) and 66% (n=1056), before and after touching the patient, respectively. Since then, the team improved some of the described actions, including the engagement of staff leadership and patients. In the next period, between July 2016 and March 2017, there were 2659 and 2784 before and after touching the patient. Hand hygiene compliance rates increased from 40% to 68% (n=1816, p<0.05) and 66% to 90% (n=2503; p <0.05) before and after touching the patient. Conclusions: The implementation of WHO multimodal HH strategy improved significantly HH compliance in ICU and step down ICU, especially after the engagement of the leadership in this process. Patients and their relatives should be empowered as supervisors of HH compliance.

[146]
Effectiveness of multidisciplinary team in VAP prevention measures in general intensive care unit

THIAGO EMANUEL DE QUEIROZ BATISTA; IRNA CARLA DO ROSÁRIO SOUZA CARNEIRO; ROSIMAIRY MAGNO REIS; YUMI DE OLIVEIRA OHNISHI; LUCIENE NOGUEIRA SAMBRANA PRIMO; ELK ALCANTARA SILVA PALHETA DE MATTOS; SUZIANE DO SOCORRO DOS SANTOS

UNIVERSIDADE FEDERAL DO PARÁ, BRAZIL.

Introduction: Patients submitted to mechanical ventilation (MV) are at high risk for developing pneumonia and the incidence of this infection increases according to duration of MV, so it is fundamental to adopt effective measures to control ventilator-associated pneumonia (VAP). Objectives: In this study, we aimed to evaluate the effectiveness of an interdisciplinary group called the "VAP Task Force" to follow up patients admitted to the Intensive Care Unit (ICU) during the first seven days of mechanical ventilation (MV) to prevent VAP. Intervention: The study was carried out at an oncological private hospital from April 2015 to November 2015 in a 20-bed adult, medical-surgical intensive care unit . Patients within 24 h of intubation and MV, were identified and the Task Force Group (TFG) initiated preventive actions through daily check list including : bedside elevation, sedation stop, , aspiration of secretions by pair of physiotherapists, Cuff pressure measurement, peptic ulcer prophylaxis, deep venous thrombosis prophylaxis, evaluation of oral cavity status and oral hygiene with chlorhexidine, being performed real-time correction of the nonconformities and suggestions for better performance in these patients. At the end of the seventh-day of MV, TGF conducted an analysis of all audits to assess adherence to the protocol RESULTS: 120 patients were monitored during the study period, only 0.8% developed VAP in the first 7 days of MV and 8.3% presented VAP until discharge from the ICU after 8 days of MV. In general, the effectiveness of the protocol was 90.8%. When evaluating only the first 7 days of MV, the effectiveness was 99.2%. Conclusions: This study suggests that systematic implementation of a multidisciplinary team approach can reduce the incidence of VAP.

[147]
CLABSI rates, etiological agents and antimicrobial resistance in a Brazilian intensive care unit

LUCIANA RODRIGUES CAMPOS; VIVIANE RESENDE; JULIANE GAZETTA; WANESSA MAGALHÃES; CLAUDIA MANGINI; FATIMA MORAES

HOSPITAL MUNICIPAL JOSE FLORENCE DE CARVALHO, BRAZIL.

introduction: since 2010, Brazil's National Sanitary Agency defined the CLABSI rates as a national healthcare associated infection benchmarking data, providing information to better identify problems and workout solutions. objectives: report CLABSI rates in an intensive care unit in a Brazilian trauma reference hospital from January 2011 to December 2016, the leading ethiological agents and antimicrobial resistance patterns. methods: this study was conducted in a 300 bed trauma reference hospital in São José dos Campos. the patients were enrolled based on the notifications of CLABSI made by the Hospital Infection Control Team during the period of January 2011 to December 2016. the clinical microbiology laboratory made the identification of the pathogens and antimicrobial susceptibility test using an automatized method. results: 483 CLBSI identified during 48,878 central line days in the UCI. the CLABSI rates were the following: 12,62 per 1000 central line/days (2011); 15,70 (2012); 10,31 (2013); 11,56 (2014); 6,96 (2015) and 9,24 (2016). the major ethiological agents identified were the following: one hundred and five strains of *S.aureus* (22,62%), ninety of *K.pneumoniae* (19,39%), sixty two of *A.baumannii* (13,36%) and thirty one of *P.aeruginosa* (6,66%). *S.aureus* resistance for oxacillin in 2011 was 66,6% (8/12) and in 2016 was 38,88% (7/18). *K.pneumoniae* resistance to meropenen: 50% (6/12) in 2013; 50% (4/8) in 2014; 58,33% (7/12) in 2015 and 33,33% (6/18) in 2016. *A.baumannii*, resistance to imipenen were 81,81% (9/11) in 2011; 85,71% (12/14) in 2012; 80% (8/10) in 2013; 100% in 2014 and 2016 (6/6 and 5/5) and 75% (3/4) in 2015. all nine *P.aeruginosa* isolates were sensible to amikacin, cefepime, ciprofloxacin, ceftazidime and imipenem. conclusions: although high, our rates of CLABSI have decreased in the last two years of the study. probably because of implementation of a bundle to prevent CLABSI, hand hygiene training and insurance of a sterile dressing.

[148]
Healthcare waste generation and segregation: the impact of a multimodal intervention

SERGIANE BISINOTO ALVES[1]; ADENÍCIA CUSTÓDIA SILVA SOUZA[2]; ANACLARA FERREIRA VEIGA TIPPLE[3]; GISELLE PINHEIRO LIMA AIRES GOMES[4]; LUIZ ANTONIO PEREIRA[3]; SÍLVIA ROSA DE SOUZA TOLEDO[2]; MILCA SEVERINO PEREIRA[2]

1.FEDERAL UNIVERSITY OF GOIÁS. PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 2. PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 3. FEDERAL UNIVERSITY OF GOIÁS; 4. FEDERAL UNIVERSITY OF TOCANTIS, BRAZIL.

Introduction: Despite the occupational and environmental risks of improper waste management, small-scale healthcare units do not have management plans. Aim: assess the impact of a participatory intervention process for managing healthcare waste in a pre-hospital emergency care unit. Methods: It was an uncontrolled before-and-after study that consisted of the following multimodal intervention: creating and implementing a management plan; conducting continuing education actions; and creating visual communication aids. Results: The result of these strategies was assessed one year post-intervention: there was a 38.9% reduction in total waste generation, a 53.5% reduction in segregation errors relative to general waste disposed of as infectious, and sharps waste segregation errors were eliminated. Conclusions: The participatory intervention conducted in the emergency unit reduced the generation of regular waste, in terms of both gross and actual weight. After the intervention, there was a reduction in segregation errors related to infectious and regular waste. Also, sharps disposal errors were eliminated. The participation of directors in creating and executing the management plan was essential in successfully implementing the plan. The participation of unit health workers in the intervention resulted in reduced waste generation and increased the adequacy of healthcare waste segregation It is important to break down the quantification and analysis of waste segregation to establish attainable goals by department, in addition to guiding necessary educational actions.

[149]
Thermo-disinfecting machines - lack of efficacy for the removal of *C. difficile* spores

RAFAEL BARIA PERDIZ[1]; MARIA BEATRIZ DIAS[1]; MIRIAN DALBEN CORRADI[1]; RENATA DESORDI LOBO[1]; JORGE SAMPAIO[2]; ANDREA ALFAYA ACUNA[1]

1.HOSPITAL SÍRIO LIBANÊS; 2. FLEURY MEDICINA E SAÚDE. SÃO PAULO, BRAZIL.

Background/objective: *C difficile* infection (CDI) is a leading healthcare related infection, with half a million cases in USA and a high prevalence in North hemisphere hospitals. We take many measures to avoid its transmission between patients, including sterilization of bedpans and glass spill-proof male urinals, a high workload for the central sterilization area. To save resources we evaluated the efficacy of 2 automatic thermo-disinfecting machines. Material/methods: The 2 machines had similar technical characteristics: Arcania® Clinox 3A Auto (5 minute cicle at 90°C max temp) and Getinge® FD 1600 (8 minute cicle at 91°C max temp). Bedpans and urinals were purposely contaminated with a clinical *C diff* spore suspension, and submitted to disinfection on the machines 24 h after. Before the cycles a positive control was obtained from the spore solution. In each load a sterile urinal was included to serve as a negative control and to check for potential contamination during the disinfecting cycle. Cultures were collected with Rodac® plates and with swabs in hard to reach areas. Results:

	Liquezime®	Sekumatic®	Prolística®	ArjoHuntleigh®
Thermo-disinfecting machine	Clinox 3A Auto Arcânia®			FD 1600 Getinge®
Positive controls	100%	100%	100%	100%
Number of contaminated devices tested	15	15	15	9
% contaminates devices with C diff growth after disinfection cicle	100%	93,3%	93,3%	88,9%
% negative controls which grew *C diff* after disinfection cicle	100%	50%	100%	100%
% machines in which culture of drainage area grew *C diff*	0%	100%	66,6%	100%

Media with and without taurocholate agreed in 71/81 (87,6%) cultures pairs. Conclusions: Contrary to previously published data, our results show that neither thermo-disinfecting machine nor the different disinfecting solutions showed efficacy in removing the *C diff* spores from contaminated bedpans and urinals. The use of these disinfecting methods may contribute to foster dissemination of *C diff*.

[150]
Washing instrumental with surgical gloves confers more risk than general surgeries

ANACLARA FERREIRA VEIGA TIPPLE[1]; JÚNNIA PIRES DE AMORIM TRINDADE[1]; DÉBORA MOURA MIRANDA GOULART[1]; ELISÂNGELA RODRIGUES BOEIRA[1]; JOYCE RUTYELLE DA SERRA[1]; EURIDES SANTOS PINHO[1]; VANDERLÉIA PATRÍCIA FREITAS NUNES BORGES[1]; LORENA RODRIGUES TEIXEIRA E SILVA[2]

1.FEDERAL UNIVERSITY OF GOIÁS; 2.ABC FOUNDATION. BRAZIL.

Introduction: gloves are standard precautions and are measures of prevention and infections control in health settings. Choosing the type of glove most appropriate for the activity to be performed is fundamental to minimize occupational risks. Aim: to evaluate the surgical glove perforation indexes by general surgery teams and by the nursing team during the manual cleaning of Products for Health (PFH). Methods: evaluation of glove perforation index, performed at a large hospital in Goiânia. 100 surgical gloves collected immediately after general surgeries and apparently intact (group A) were evaluated, and 128 surgical gloves were used by workers at the Sterilization Central Supply (SCS) to clean PFH (group B) were also evaluated. The control groups were composed of corresponding amounts of new gloves from the same manufacturer, batch and size. The water leakage test was used after light compression of the palm and fingers, considered the gold pattern for the detection of perforations in gloves. Values of $p \leq 0.05$ were considered statistically significant. Results: the perforation frequency was higher in the surgical gloves used for PFH cleaning, 59 (46.1%) than those for general surgeries, 25 (25.0%) with statistical relevance ($p = 0.047$), even with predominance of overlapping of gloves by workers. The locations with the highest indexes of perforation were the thumb and the palm of the hand, followed by the back of the hand in the surgery gloves and the index finger on the gloves of the SCS. There was no significant difference in perforations between the right and left hands. In the control groups, weren't identified perforation of gloves. Conclusions: washing PFH using surgical gloves presented as an activity of greater risk for the worker than the performance of general surgeries. The study reinforces the contraindication of the use of surgical gloves to clean PFH.

[151]
External ventricular drain infections: strategies to reduce infection

LOURDES DAS NEVES MIRANDA; JOSÉ LUIZ BLUMER JÚNIOR; EVELIN AMARAL RAMOS; GABRIELA BRANCO SONEGO; LILIANE NUNES DA SILVA; MANOEL ETELVINO MIRANDA; LUCY NAGM; ALINE ANDREA MARTINS MOREIRA; TATHIANA BERROCAL; VANESSA GRASSMANN

GENERAL HOSPITAL OF ITAPECERICA DA SERRA, SÃO PAULO STATE, BRAZIL.

Introduction: External ventricular drains (EVDs) are used to monitor and treat elevations in intracranial pressure. In 2009, the service of neurosurgery in trauma patients began in our hospital. Objective: Reduce by 40% the rate of surgical site infection associated with EVD in trauma patients at a community hospital in the metropolitan area of São Paulo. Interventions: Since 2012, the infection control department along with nursing leadership and neurosurgeons with the use of a quality improvement tool (PDCA cycle) established actions for the prevention of EVD-associated ventriculitis: inclusion of care with EVD in periodic surgical site infection prevention training; use of clipper for whole scalp hair removal before catheter insertion; determination of exclusive actions of nurses (performing daily dressings, handling the EVD system, wasting CSF from the reservoir); intraoperative collection of liquor by neurosurgeons; creation of a Standard Operating Procedures on proper liquor sampling from the EVD by physician in the intensive care unit and ward; removing EVD as soon as possible; and encourage the increase of adherence to antibiotic prophylaxis. In 2014, after a small reduction, the rate increased, due to the partial adherence of the agreed measures. From 2015, the strategies were reviewed with training in the surgery ward and feedback of the results, revision of Standard Operating Procedures on nursing management of EVDs, quarterly analysis of the data. Result: During the period of 2013 to 2016, EVD-related infection rates were reduced from 13.9% to 6.1% per procedure. Conclusion: The gradual but significant decrease in the incidence of infection was achieved after application of the components of the bundle of measures for a long period. We emphasize the importance of systematizing and reviewing intervention strategies with the use of quality tools and team involvement.

[152]
Fosfomycin in severe infections due to pandrug resistant gram-negative microorganisms

LAURO VIEIRA PERDIGÃO NETO[1]; MAURA SALAROLI DE OLIVEIRA[1]; ROBERTA CRISTINA RUEDAS MARTINS[2]; ANA PAULA MARCHI ROSIN[2]; LUCIANNA AUXI TEIXEIRA JOSINO DA COSTA[3]; LIA FERNANDES ALVES DE LIMA[3]; CHRISTIANNE FERNANDES VALENTE TAKEDA[3]; SILVIA FIGUEIREDO COSTA[2]; ANNA S LEVIN[2]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO; 2. FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO; 3. HOSPITAL GERAL DE FORTALEZA, STATE OF CEARÁ, BRAZIL.

Introduction/Objectives. Fosfomycin in not chemically related to other antimicrobial drugs, and acts on the cell wall synthesis in Gram-positive and Gram-negative bacteria, even in multidrug resistant organisms. The aim of this study was to describe a prospective series of patients with severe infection due to Gram-negative bacteria, resistant to β-lactam and colistin, treated with fosfomycin. Methods. We included hospitalized patients at Hospital das Clínicas of São Paulo and Hospital Geral de Fortaleza, Brazil, with healthcare-associated infection by Gram-negative bacteria resistant to β-lactams and colistin. Minimum inhibitory concentration (MIC) for fosfomycin was determined by agar dilution and synergism with meropenem using checkerboard. Clonality of *K. pneumoniae* isolates was investigated by PFGE. Whole Genome Sequencing using MiSeq IlluminaTM was done in blood isolates. Results. Thirteen patients were included: eight (62%) were males. Mean age was 52 years (SD:24). Eight (62%) patients had undergone surgery; seven (54%) were immunosuppressed by renal transplantation (n=3; 23%), liver transplantation (n=1; 8%), marrow aplasia (n=1; 8%), papillary tumor (n=1; 8%) and Crohn's disease (n=1; 8%). APACHE II mean score was 16 ± 9. All patients used fosfomycin in combination. Three (23%) presented failure, two (15%) had an indeterminate response and eight (62%) were cured. The 14- and 28-day mortality rates were 0% and 25%, respectively. Eight patients (62%) had adverse events. The microorganisms involved were *K. pneumoniae* (n=9), followed by *S. marcescens* (n=3) and *P. aeruginosa* (n=1), mostly isolated from blood (n=11). *K. pneumoniae* belonged to 3 clonal profiles, and to ST11, ST258 and ST340. MIC50 and MIC90 for fosfomycin were, respectively, 256 and > 256 µg/mL. Synergism with meropenem was universal. Conclusions. Fosfomycin proved to be a safe and effective for treating infections due to panresistant microorganisms and presented synergism with meropenem.

[153]
Healthcare associated infections in a pediatric bone marrow transplantation unit

HELOISA IHLE GARCIA GIAMBERARDINO[1]; BIANA DOMICIANA MATUCHESKI[1]; PRISCILLA FÁTIMA RETT[1]; ANA LUISA GARCIA GIAMBERARDINO[2]; ANA PAULA OLIVEIRA PACHECO[1]; ANA LUIZA MELLO RODRIGUES[1]

1.HOSPITAL PEQUENO PRINCIPE (HPP); 2. PONTIFÍCIA UNIVERSIDADE CATOLICA DO PARANA (PUC), BRAZIL.

INTRODUCTION: Bone Marrow Transplantation (BMT) is a treatment option for patients with severe and reserved oncological diseases. This group of patients is more vulnerable to the development of Healthcare Associated Infections (HAIs), due to immunosuppressive conditions, repetitive and long stay hospitalizations, and invasive devices. OBJECTIVE: evaluate the epidemiological profile HAI in patients who performed BMT in a pediatric quaternary care hospital. METHODS: Retrospective study using data from the Epidemiology and Infection Control Department (EICD), in a pediatric reference hospital in south of Brazil. All hospitalized patients diagnosed with HAIs, were included in this study .The study period was since the implantation of the BMT Service, in April of 2011 to December of 2016. RESULTS: During the study period, 82 transplants were performed, 63% of males and 37% of females. Of the 82 patients with transplantation, 45 patients (55%) progressed with at least one episode of HAI, totalizing 59 cases. Most prevalent topographies were: 24% (14) Clinical Primary Bloodstream Infection (BSI); 17% (10) Laboratory-confirmed BSI; 15% (9) Central Venous Catheter-Associated Infection (CLABSI); 15% (9) Pneumonia, 15% (9) Influenza syndrome, 8% (5) Gastrointestinal tract, other topographies (mouth, skin, urinary tract infection and acute otitis media). Laboratory confirmed that cases of BSI were identified with the following etiological agents: 40% (4) Staphylococcus epidermidis; 10% (1) Candida albicans; 10% (1) Candida parapsilosis; 10% (1) Candida kefyr; 10% (1) P. Aeruginosa and 10% (1) Streptococcus viridans group. CONCLUSION: Clinical primary bloodstream infection (BSI) was the most frequent identified topography, fact in which is consistent with the literature. Regarding the etiology, there were difficulties in isolation due to prophylactic antimicrobial regimens routinely used in clinical protocols, in which result in a significant number of negative blood cultures.

[154]
Challenges in creating an isolation unit in a general hospital

TAISE COSTA RIBEIRO KLEIN; CLAUDIA MANUELA SIQUEIRA DE OLIVEIRA; ANA MARIA MARTINS CARLOS; ISABEL BERNS KUIAVA

UNIVERSITY HOSPITAL – UNIVERSIDADE FEDERL DE SANTA CATARINA, BRAZIL.

Introduction: Increased bacterial resistance interferes with patient isolation dynamics in hospitals. In institutions with collective rooms, it means blocking beds: bad to the hospital and particularly to the population. Objective: to report the creation experience of the Isolation Unit (IU) in a general hospital in the south of Brazil. Interventions: As a strategy to contain Multidrug Resistant Bacteria (MDR) in the hospital. An UI was created with 17 beds in 2015. The work team were trained in the various shifts. The transfers were gradual. Criteria for hospitalization in the IU: patients colonized with MDR, from another institution, discharged from the ICU with surveillance cultures in progress and patients with infectious-contagious diseases. Enterobacteriaceae carbapenems-resistant (Klebsiella spp, E. coli, Enterobacter spp), Acinetobacter spp carbapenems-resistant, Pseudomonas spp carbapenems-resistant, Oxacillin-resistant S. aureus, Vancomycin-resistant Enterococcus spp. and Enterobacteriaceae carbapenemases-positive were considered MDR. Did not go to this unit: pregnant and postpartum, liver transplants recipients, several burn patients even with MDR. Results: adaptation was gradual, since protocols needed to be incorporated into daily practice. The cohorts were guided by the Hospital's Infection Control Service (HICS). Initially there were difficulties in transferring IU patients to other units when cultures discarded MDR. Adjustments were necessary: new training, new inclusion criteria, new criteria for surveillance cultures, among other changes in routines to improve the progress and effectiveness of the service. The MDR colonization rates of patients reduced 53% from 2015 to 2016. Conclusions: Creating a UI requires training and daily and close follow-up between HICS and staff. Isolating patients from the ICU preventively was a protective mechanism. The cohorts helped to optimize the beds. Colonization rates have reduced considerably.

[155]
Strategic planning for healthcare waste management: a quasi-experimental study

SERGIANE BISINOTO ALVES[1]; ADENÍCIA CUSTÓDIA SILVA SOUZA[2]; ANACLARA FERREIRA VEIGA TIPPLE[3]; HELINY CARNEIRO CUNHA NEVES[3]; DAYANE DE MELO COSTA[3]; LUIZ ANTONIO PEREIRA[3]; GISELLE PINHEIRO LIMA AIRES GOMES[4]; MILCA SEVERINO PEREIRA[2]

1.FEDERAL UNIVERSITY OF GOIÁS AND PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 2. PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 3. FEDERAL UNIVERSITY OF GOIAS; 4. FEDERAL UNIVERSITY OF TOCANTINS, BRAZIL.

Introduction: Healthcare waste management is a challenge for environmental and health policies. The growth and diversification of sources of waste generation and structural, operational and political flaws influence the steps in waste management, especially segregation. Aim: assess the use of strategic planning and its impact on the creation and implementation of a waste management plan at a family primary health unit. Methods: This was a before and after quasi-experimental study conducted at a family primary healthcare unit located in the municipality of Goiânia, Goiás, in the Center-West region of Brazil. The intervention consisted of creation and implementation of a healthcare waste management plan. This involved participation of all of the unit's health workers and local and regional managers. This strategy enabled the plan to be created and implemented simultaneously. Part of the management plan consisted of ongoing education actions, which were bolstered by posters, banners, flyers and stickers. The post-intervention assessment was conducted a year later by weighing and analyzing waste segregation. Results: After the intervention, there was a 37.26% reduction in the total waste produced and a 60.44% decrease in the quantity of waste per procedure. In gross weight, infectious waste was reduced by 95.66%, general waste by 5.82% and sharps by 21.53%. In actual waste, this reduction was 89.86% for infectious waste, 26.67% for general waste and 31.66% for sharps waste. Conclusions: the creation and implementation of a waste management plan via strategic planning was effective in managing waste, reducing segregation errors relative to infectious, general and sharps waste. All professionals were involved in implementing strategic planning, which resulted in group commitment.

[156]
Patterns of prescription and monitoring of generic vancomycin in a teaching hospital in Brazil

JULIANA DA SILVA OLIVEIRA; JOÃO GUILHERM CARVALHO DE OLIVEIRA SANTOS; FERNANDA MARIA ALVES LIMA; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU MEDICAL FACULTY, UNESP –SÃO PAULO STATE UNIVERSITY. BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction/Objectives: Vancomycin is unique among antibiotics. It has been in use for more than 50 years, and remains the drug of choice for the therapy of methicillin-resistant Staphylococcus aureus (MRSA) and other Gram-positive pathogens Concerns have been raised about generic formulations of vancomycin – especially in developing countries – but the wide availability of tests for monitoring serum vancomycin concentration made it possible to adjust doses in order to improve outcomes. We aimed at describing patterns of generic vancomycin prescription and monitoring in a Brazilian hospital and their impact on outcomes. Methods: A cohort of 513 adult patients who were treated with vancomycin in year 2014 was retrospectively studied. Outcomes of interest were achieving suboptimal serum trough concentrations in the first serum monitoring and death within 30 days of vancomycin introduction. Multivariable analysis (logistic and Cox regression were applied). Results: Less than 25% of subjects achieved optimal (15-20 mg/L) trough concentrations, even after five tests and dosing adjustments. However, the sum of subjects presenting optimal and high concentrations was predominant in each and every test. Renal disease (OR=4.86, 95%CI=2.05-11.53, P<0.001) and daily dosing (OR for mg/kg =1.04, IC95%=1.01-1.07, P=0.01) were positively associated with higher vancomycin levels. Additionally, younger subjects were less likely to present lower serum concentration. In survival analysis, optimal concentrations were associated with better outcomes, but only those with high levels presented significantly increased risk (HR=1.80, 95%CI=1.05-3.07, P=0.03). Conclusion: Our results warn about risks of toxicity with high concentrations of vancomycin. Fine adjustment of posology (e.g., with continuous infusion) may contribute to improve safety and efficacy.

[158]
Peritoneal dialysis-associated peritonitis in pediatric patients

HELOISA IHLE GARCIA GIAMBERARDINO[1]; BIANA DOMICIANA MATUCHESKI[1]; HADELLE HABITZREUTER HASSMANN[1]; ANA LUISA GARCIA GIAMBERARDINO[2]; LUCIMERY DE CASTRO SYLVESTRE[1]; JANE MELISSA WEBLER[1]

1.HOSPITAL PEQUENO PRINCIPE (HPP); 2. PONTIFÍCIA UNIVERSIDADE CATOLICA DO PARANA (PUC), BRAZIL.

Introduction: Peritoneal dialysis (PD) is the most used modality in pediatric patients with chronic kidney disease and peritonitis remains its leading complication. It is the major cause of patients discontinuing PD, switching to hemodialysis and using antibiotics and is most commonly caused by the negative coagulase staphylococcus and *Staphylococcus aureus*. The peritonitis rate should be no more than 1 episode every 18 months (0,67/year at risk).Objective: evaluate the epidemiologic profile of pediatric patients with peritoneal dialysis-associated peritonitis in a pediatric reference hospital. Methods: Retrospective study trough the Epidemiology and Hospital Infection Control Department (EHICD) and Nephrology Department ,all patients in peritoneal dialysis that developed peritonitis from January 2015 to December 2016 were included. Results: 17 peritonitis cases in 12 patients were identified, in which 10 are male (83,3%) and 2 female (16,6%). One patient (8,3%) was among 30 days to 1 year old, 7 (58,3%) was among 1 to 5 years old and 4 patient (33,3%) was among 5 to 12 years old. One patient (8,3%) had 3 peritonitis episodes in two years (1,5/year at risk), 2 patients (16,6%) had two episodes in two years (1 year/at risk) and the other 9 patients (75%) had only 1 episode in two years (0,5 year/at risk). Peritoneal culture revealed: nine cases (52,94%) had a negative culture, 2 (11,76%) Acinetobacter baumannii, 2 (11,76%) *Staphylococcus saprophyticus*, 1 (5,88%), *Escherichia coli,* 1 (5,88%), *Enterobacter aerogenes* and 1 (5,88%)*Pseudomonas aeruginosa*. Conclusion: peritonitis affected more the male (83,3%) ,happened among 1 to 5 years old (58,3%). Most cultures had negative result (52,94%). Although the medium rate of 0,5 year/at risk is under the recommended rate (0,67/year at risk), the results of this study denoted the importance of peritonitis prevention

[159]
Prevalent pathogens catheter-associated urinary in a intensive care unit - a five years survey

TAISE COSTA RIBEIRO KLEIN; PATRICIA DE ALMEIDA VANNY; FERNANDA LUNARDI; JULIANA LOES TORRES

UNIVERSITY HOSPITAL – UNIVERSIDADE FEDERAL DE SANTA CATARINA, BRAZIL.

Introduction: Catheter-Associated Urinary Tract Infection (CA-UTI) is one of the most common causes of healthcare-related infections. Urine culture can show pathogens, resistance mechanisms and sensitivity profile allowing therapy adequacy. To know the pathogens profile from the hospital is important to elaborate a protocol for an appropriate therapy. Objectives: To identify the prevalence of CA-UTI pathogens of a general adult ICU in the last 5 years. Methodology: Retrospective research of UTI data from a general adult Intensive Care Unit (ICU) of a south Brazil hospital, which has 10 to 14 beds. This data was retrieved from infection control service epidemiological bulletins, from 2012 to 2016. Exposure and incidence densities and percentage were calculated. those who stayed in the ICU less than 24h were excluded. Results: There were 21531 patients/day, 3603 patients exposed and 17219 catheters/day. CA-UTI incidence density was 6.92. 177 pathogens were isolated: Candida spp=32.77% (C. albicans ,C. tropicalis, C. parapsilosis, C. glabrata, C. lusitania e C. sp), Klebsiella spp=19.77% (K. pneumoniae, K. ohmeri), Enterococcus spp=10.73%(E. faecium, E. faecalis e Enterococcus spp), Escherichia coli=10.73%, Pseudomonas spp=9.04% (P. aeruginosa, P. putida), Enterobacter sp=5.08% (E. aerogenes, E. cloacae e E. freundii), Proteus mirabilis=3.39%, others=8.47% (Acinetobacter baumannii, Aeromonas sp, Burkholderia cepacia, Morganella morgani, Serratia marcecens, Streptoccocus agalactiae, Stenotrophomonas maltofilia, Trichosporon asahii). Two mechanisms of resistance were detected: 11.86% were extended spectrum betalactamase producers and 7.9% were carbapenemase producers pathogens. Conclusions: Candida spp was the most common isolated pathogen, followed by Klebsiella spp. The prevalence of Candida spp shows a great role of these agents in CA-UTI in the ICU, requiring research about preventive methods and adequate therapeutic resources in that setting.

[160]

Aminoglycosides are a promising option in multi-resistant gram negative treatment?

LAURO VIEIRA PERDIGÃO NETO[1]; ROBERTA CRISTINA RUEDAS MARTINS[2]; MAURA SALAROLI DE OLIVEIRA[1]; GLEICE CRISTINA LEITE[2]; THAIS GUIMARÃES[1]; RICHARD ANDREW STABLER[3]; FLAVIA ROSSI[1]; ANNA S LEVIN[2]; SILVIA FIGUEIREDO COSTA[2]

1.HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL; 2. FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL; 3. LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, UK.

Introduction. Alternatives to beta-lactams and colistin are restricted and in many cases only aminoglycosides are available. The aim of this study was to describe the susceptibility and mechanisms of aminoglycoside resistance in multidrug-resistant Gram negative clinical isolates. Methods: Nine pan-resistant Klebsiella pneumoniae, ten pan-resistant A. baumannii and twelve carbapenem-resistant colistin-susceptible A. baumannii isolates were submitted to microdilution for aminoglycosides and to Whole Genome Sequencing by MiSeq. Results: *K. pneumoniae* isolates had minimal inhibitory concentrations (MIC) for amikacin and gentamicin ranging from ≤4μg/mL to >32μg/mL and ≤1μg/mL to >8μg/mL; the isolates belong to sequence types ST340, ST11 and ST258 and to three different pulsed field types. *K. pneumoniae* isolates had one to five aminoglycoside modifying enzymes (AME) genes: *aad*A2 (n=6), *str*B (n=5), *str*A (n=4), *aac*(3)-IId (n=4), *aac*(3)-IIa (n=4), *aac*(6')Ib-cr (n=4), *aac*A4 (n=3) and *aph*(3')-Ia (n=3) were detected; three strains showed *rmt*B methylase gene. Among colistin susceptible *A. baumannii* isolates, amikacin and gentamicin MIC ranged from ≤ 4μg/mL to >32μg/mL, and from 4μg/mL to >8μg/mL, respectively. All colistin resistant *A. baumannii* strains had amikacin MIC >32μg/mL and gentamicin MIC ≥8μg/mL. Colistin-resistant group were amikacin resistant more frequently than colistin-susceptible group (p=0.009). Colistin susceptible strains belong to ST79 (n=1), ST107 (n=4), ST317 (n=3), ST32 (n=1) and ST15 (n=1). Eleven colistin-resistant strains belong to the sequence type ST79. Seven aminoglycoside modifying enzymes were identified in the *A. baumannii* isolates, with the highest number in the colistin resistant group (3.81 ± 0.42 vs 2.84 ± 1.38, p = 0.001). Conclusions. All the multiresistant Gram negative microorganisms had any AME gene, even when susceptible. Colistin resistant *A. baumannii* exhibits higher frequency of AME genes than colistin susceptible isolates.

[161]
Multiresistant microorganisms: a reality in home care

ANA PAULA RIBEIRO TEIXEIRA; SHEILA SILVEIRA SIAO LOPES; LARISSA SIQUEIRA SILVA; NATÁLIA NASCIMENTO BARROS PALMIERI; MARIANA CARVALHO MELO; PAULA CARSALADE RABELLO; SAMANA BARBOSA VIEIRA

CAPTAMED CUIDADOS CONTINUADOS LTDA, BRAZIL.

the emergence of multi resistant microorganisms (MDRO) is not restricted only to the hospital environment, but is also monitored in home care services since the emergence of infections caused by such microorganisms enhances morbidity, mortality and the risk of hospitalization. in this context, this study has the goal to expose MDROs identified in the patients cared for *Captamed Continued Care ltda*, a home care company from Belo Horizonte. this paper consists of a retrospective and quantitative study of the infections identified from January 2015 to December 2016. monthly, 2402 patients are monitored and have on average 144 monthly infections. there were identified 1862 infections in 2015 and 1636 in 2016. of these 3498 infections, 134 (3,87%) were caused by MDROs. the MDRO identified were: 46 (34,32%) *Escherichia coli* producer of betalactamase of extended expectrum (ESBL), 01 (0,7%) *Escherichia coli* producer of carbapenemase (KPC), 04 (2,98%) *Enterococcus ssp.* resistant to vancomycin (VRE), 12 (8,95%) *Klebsiellas spp.* KPC, 24 (17,9%) *Klebsiella spp.* ESBL, 04 (2,98%) *Morganella spp.* ESBL, 06 (4,47%) *Acinetobacter baumannii kpc*, 03 (2,23%) *Proteus spp.* esbl, 11 (8,2%) *Proteus spp.* KPC, 07 (5,22%) *Staphylococcus aureus* resistant to meticilin (MRSA), 01 (0,7%) *Pseudomonas spp.* ESBL, 02 (1,5%) *Pseudomonas spp.* KPC, 01 (0,7%) *Providencia spp.* esbl, 01 (0,7%) *Enterobacter aerogenes* ESBL and 11 (8,2%) *Clostridium difficile*. related to the type of the infection, there were identified 121 communities, 12 related to the assistance and 01 related to the assistance of another healthcare service. concluding therefore that it is necessary to monitor the emergence of MDROs in home care, even if challenging and yet in development. hand hygiene, the use of individual protection equipment (IPE) and the decolonization are low cost measures and are important in the prevention of the dissemination of the MDROs.

[162]
Infection of bloodstream in ICU of a school hospital in western Paraná

HEVERTON SOUZA BERALDO; CRISTINA DAIANA BOHRER; DENISE HOFFMANN RIGO; DRIELI WAWZENIAK DE ANCHIETA; FERNANDA FREZARINE ROCCO; THAIS VANESSA BUGS; DEBORA CRISTINA INACIO

UNIOESTE, STATE OF PARANÁ, BRAZIL.

Introduction: ICS is a complication in ICU, and intravascular devices, especially short term CVC, are the main causes of ICS. Among the risk factors are patient colonization, inadequate preparation during insertion, length of stay with the device, and constant manipulation for fluid administration, total parenteral nutrition, drugs and blood derivatives. Therefore, this study had as objective to report the incidence of ICS in CVC, as well as the profile of microorganisms in CVC in the ICU of a School Hospital in the West of Paraná. Methodology: Retrospective, quantitative and descriptive study, using the SCIH database of a School Hospital located in the western region of Paraná, from January to December, 2016. The work is approved by the CEP of the State University of Western Paraná, under official letter 1,447,806 / 17. Results: A total of 601 patients were admitted in the period, and 130 patients acquired IRAS, corresponding to 21.63% of the admitted patients. 170 IRAS were notified, and CVS related ICS totaled 54 (31.76%) of reported IRAS. As for the isolated microorganisms in cultures, Staphylococcus haemolyticus was the most prevalent, totaling 6 (17.14%), Klebsiella Pneumoniae 5 (14.28%), Staphylococcus Aureus 5 (14.28%), Pseudomonas Aeruginosa 4 (11, 42%), Candida Tropicalis 4 (11.42%), Staphylococcus Epidermidis 4 (11.42%), Enterococcus faecalis 2 (5.71%) and other microorganisms 5 (14.28%). Conclusion: The incidence of CVC related ICS is high, and knowing the incidence of cases, as well as identifying the most prevalent microorganisms involved, is of great importance due to high mortality rates, difficult treatment, and an important indicator of quality of care , Since the main prevention measures depend exclusively on the healthcare team that provides care to the patient.

[163]
Survey of management and processing of loaned surgical instruments in Brazilian hospitals

MICHELLE AUGUSTA DOS SANTOS[1]; LILLIAN KELLY DE OLIVEIRA LOPES[1]; DAYANE DE MELO COSTA[2]; THAIS RODRIGUES VELOSO[1]; DULCELENE DE SOUSA MELO[1]; HONGHUA HU[3]; KAREN VICKERY[3]; ANACLARA FERREIRA VEIGA TIPPLE[1]

1.FACULTY OF NURSING, FEDERAL UNIVERSITY OF GOIAS; 2.FEN,UFG,BRAZIL AND FACULTY OF MEDICINE AND HEALTH SCIENCES, MACQUARIE UNIVERSITY, AUSTRÁLIA; 3.SURGICAL INFECTION RESEARCH GROUP, FACULTY OF MEDICINE AND HEALTH SCIENCES, MACQUARIE UNIVERSITY

Introduction: Due the high cost, complexity and specificity of some reusable surgical instruments, especially orthopedic instruments, hospitals usually borrow these instruments from loaner companies. Loaned surgical instruments are challenging to manage and process at Sterilizing Service Units (SSU) due to their complex design and often lack of sufficient time for adequate preparation. Inadequate time directly affects cleaning and sterilization efficacy, and may promote biofilm formation. Material and methods. A national cross-sectional self-administrated survey with multiple choice and short answer questions was applied. The questionnaire was evaluated by experts in Brazil. Ethics Committee approval was obtained. Results: A hundred forty-three participants completed the questionnaire. Most participant were tertiary educated, work in a centralized SSU, with a structured unidirectional processing workflow. Overall, both structure and work process indicators investigated were failed to meet standards. These were: delayed loaned sets delivery; manual cleaning only; wide use of single type detergent (enzymatic); staff from loaner company responsible for instrument cleaning – some solely responsible; non-dedicated storage area; use of auxiliary table for distribution; non-point-of-use pre-cleaning or point-of-use pre-cleaning with saline/alcohol; delayed post-use cleaning commencement; and use of alcohol for cleaning post-use and prior return. Conclusion: Quality indicator regarding structure and work process for the management and processing of loaned RSI failed to meet standards. This highlights the need for intervention to improve instrument processing, cease inappropriate practices, and maintain the patient, company and perioperative personnel safety.

[164]
Predictors factors for multiple occupational accidents in health workers in 25 years of records*

ZILAH CÂNDIDA PEREIRA DAS NEVES[1]; MILCA SEVERINO PEREIRA[2]; ADENÍCIA CUSTÓDIA SILVA E SOUZA[2]; SHEILA ARAÚJO TELES[3]; SILVANA DE LIMA VIEIRA SANTOS[3]; KATIANE MARTINS MENDONÇA[4]; ANACLARA FERREIRA VEIGA TIPPLE[3]

1.SCHOOL OF SOCIAL AND HEALTH SCIENCES, PUC-GOIÁS, AND MUNICIPAL HEALTH SECRETARY OF GOIANIA, BRAZIL; 2. SCHOOL OF SOCIAL AND HEALTH SCIENCES, PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS, BRAZIL; 3. FACULTY OF NURSING, FEDERAL UNIVERSITY OF GOIÁS, GOIANIA, BRAZIL; 4. FEDERAL INSTITUTE OF GOIÁS, BRAZIL.

Introduction: Occupational exposure to biological material requires compulsory notification. Healthcare workers (HCWs), who are affected, may be exposed to hepatitis B and C viruses and HIV. Aim: To determine the sociodemographic and labor factors associated to the occurrence of multiple occupational exposure to biological material in the metropolitan region of Goiânia-GO. Methods: Cross-sectional study including records of occupational exposure to biological material from two sources: 1) Records of HCW in a referral hospital from 1989 to 2010; and 2) SINAN forms from 2006 to 12/31/2014. Database linkage was performed for data analysis. Socio-demographic and labour were the predictor variables, and have had more than one exposure, the outcome. Univariate analysis and logistic regression model were applied. Results: A total of 11,536 occupational exposures were recorded. Of these, 9,575 (83.0%) occurred with HCWs. Approximately 665 (7.5%) HCW had been exposed to more than one element, 70 (0.8%) exposed to three or more; totaling 8,825 victims. Sex, age, educational level, occupational category, injury site, object, type of biological material, and known source patient were statistically significant for multiple exposures in the univariate analysis. Following multivariate analysis, age, type of object, and organic fluid remained. Young adult HCWs were 2.16 times more likely to be injured more than once, and those who handled lancets and blades, 1.6 times. Needles caused the highest number of injuries (58.8%). HCWs that were exposed to blood/serum/plasma were approximately three times more likely to have new occupational exposure. Conclusion: Short time work experience and higher risk conditions were involved in multiple accidents. However, it was inferred that a higher notification rate was found for major accidents. * This study is part of the thesis defended by the Graduate Program in Nursing, Faculty of Nursing, Federal University of Goiás.

[165]
Prevalence of HAI in ICU of a school hospital in the western region of Paraná

HEVERTON SOUZA BERALDO; CRISTINA DAIANA BOHRER; DENISE HOFFMANN RIGO; DRIELI WAWZENIAK DE ANCHIETA; FERNANDA FREZARINE ROCCO; THAIS VANESSA BUGS; DEBORA CRISTINA INACIO

UNIOESTE, STATE OF PARANÁ, BRAZIL.

Introduction: Health Care Related Infections (IRAS) are considered to be a major public health problem, and ICU patients are more likely to get infections. Clinical conditions, comorbidities and extremes of age increase the risks of IRAS, especially in the elderly, newborns, DM, neoplasias, hypertension, AKI, smoking, alcoholism, obesity, malnutrition, as well as immunological factors and the high number of invasive procedures performed. This study aimed to report the prevalence of IRAS in the ICU of a School Hospital in the West of Paraná. Methodology: Retrospective, quantitative and descriptive study, using the SCIH database of a School Hospital located in the western region of Paraná, from January to December, 2016. The work is approved by the CEP of the State University of Western Paraná, under official letter 1,447,806 / 17. Results: In the analyzed period, 601 patients were admitted, and 130 patients acquired IRAS, corresponding to 21.63% of patients admitted to the sector. A total of 170 IRAS were reported, with 54 (31.76%) IRAS, followed by LPP 50 (29.41%), PAV 42 (24.7%), ITU 20 (11.76%), PNM 3 (3.52%) and skin infections 1 (1.17%) respectively. Conclusion: IRAS are constant in the ICU, and for the indexes to be decreased it is of great importance that the NVEH and the SCIH perform their actions in partnership conducting the active search and the epidemiological surveillance of cases, as well as investments in health education for all team. Prevention is still the best way to avoid IRAS, and measures such as hand hygiene corroborate with the reduction of these and provide greater safety for patients and the acting team.

[169]
Healthcare-associated infections in a unit for cerebrovascular diseases

SEBASTIÃO PIRES FERREIRA FILHO; RICARDO SOUZA CAVALCANTE; SANDRA MARA QUEIROZ; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Patients with cerebrovascular diseases (CVD) have varying severity status and may be at increased risk for healthcare-associated infections (HCAIs). We describe data of prospective surveillance of HCAIs in a unit for CVD patients in São Paulo State, Brazil. METHODS: The study was conducted in the teaching hospital of Botucatu School of Medicine. We analyzed prospective HCAIs surveillance data for the 10-bed CVD unit in the period from January 2016 through February 2017. Data were compared to those from two adult medical-surgical intensive care units (ICUs) using OpenEpi (Emory University, Atlanta, GA, USA). Shewhart control charts (u-charts) were drawn in NCCS 9 (LLC inc, Kaysville, Utah, USA) were used to test for stability of incidence rates over time. RESULTS: Overall HCAIs incidence was 12.9 per 1,000 patients-day. The use of devices was low: 8.1% for urinary catheters, 6.1% for central lines, 3.4% for mechanical ventilation. Ventilator-associated pneumonia (VAP) and catheter-associated urinary tract infections (CAUTI) had incidence of 7.6 and 9.3 per 1,000 device days, respectively. No case of central-line associated bloodstream infection (CLABSI) was detected in the period. There was relevant incidence of non-ventilator associated pneumonia: 18 cases, or 5.5 per 1,000 patients-day. Incidence density rates were inferior to those identified in the ICUs for overall HCAIs (RR, 0.16; 95%CI, 0.09-0.25; P<0.001), but incidence of device-associated infections did not differ statistically from the reference unit values. A status of statistical control for HCAIs was detected in Shewhart charts. CONCLUSIONS: There was relevant incidence of HCAIs in the CVD unit, with trend of stability over time. The use of invasive devices was low, but patients in whom those devices were inserted were at similar risk for HCAIs as those from ICUs.

[170]
Changing surgical site infection calculation tool: faster situation diagnosis, early intervention

GRAZIELA RIBEIRO FONSECA; POLYANA GITIRANA GUERRA RAMEH; DANIELA SPERANDIO FEITOSA DALLA BERNARDINA; MELISSA FONSECA ANDRADE; MARTINA ZANOTTI VALENTIM; NATHALIA D´ALMEIDA VASCONCELOS; LUDIMILA RIBEIRO DO NASCIMENTO SERRA

VITÓRIA APART HOSPITAL, STATE OF ESPÍRITO SANDO, BRAZIL.

Early detection of surgical site infections (SSI) rate increase is essential for the adoption of measures for prevention. Analytical rate is the formula most widely used but it is not the only available. Institute for Healthcare Improvement proposes changing this analysis for two new tools: day-between and opportunity-between. This study aimed to compare these new strategies with analytical one. We analyzed SSI cases, according to notification criteria recommended by Anvisa, in two types of surgery: spinal arthrodesis and hip arthroplasty from August 2014 to April 2017,total of 317 surgeries and 17 SSI. We applied three calculation formulas: analytic, day-between and opportunity-between. SSI rates are released 3 months after semester closure in according to Anvisa RDC8/2009.Therefore, difference between the problem itself and the opportunity to chance can reach 9 months.SSI rate in spinal arthrodesis in first half of 2016 was 9.9(goal rate:3.2), while in same period days-between and opportunity-between were 117 and 16,respectively.Although day-between high number suggested a great result it was misrepresented by lower surgeries done in holiday period. On the other hand, opportunity-between low value indicated a reliable early worsening trend and process surveillance was intensified. In hip arthroplasty,SSI rate in the same period was 6.8(goal rate:2.6) while day-between and opportunity-between were 0.These last two rates indicated two surgical site infections in the same day. Weaknesses were detected in SPD and machinery acquisition and physical space remodeling were made. Opportunity-between was the more reliable tool and less subject to utilization service bias. A single change in SSI calculation formula brought agility in problem detection and favoured early intervention since it turns numerical value more intelligible for HICC and surgical teams providing a new gold standard: a single case should be considered sentinel event and encourage immediate process review.

[171]

Evaluation of actions to reduce catheter-related bloodstream infection in an oncological unit

PATRICIA ESTEVES; POLLYANNA MARTINS DA SILVA; CAMILA SUNAITIS DONINI; MARIA GABRIELA REZENDE DA SILVA; LIDIANE PEREIRA; JOÃO CARLOS BARBOSA

HOSPITAL DA LUZ, SÃO PAULO, BRAZIL.

Introduction: The totally implanted central catheters (port-a-cath) are widely used in oncohematological units. One of the complications of the use of port-a-cath is the catheter-associated bloodstream infection, which is characterized as one of the main problems of infection related to health care, especially in immunosuppressed patients. The present study aims to present the actions performed in the onco hematological unit with the purpose of reducing the density of bloodstream infections related to the totally implanted catheter, comparing them in the last triennium, showing the impact after the interventions. Interventions: The main actions implemented in the unit were: the constant incentive for the correct practice of hand hygiene in the five moments, with creation of the internal incentive group; preparation of a group of "port-a-cath" punchers with elaboration of institutional protocol and standardization of conduct; training on manipulation of implantable venous catheter; audits of catheter puncture; training on care with catheter, annual training in prevention of infection related to health care, and elaboration of a protocol for prevention and care of onco-hematological patients, hand hygiene and the beginning of insertion of the family into patients' care. Results: Analyzing the data over 3 years, it was verified that the density of infection showed a small reduction in the year 2015 (▼ 28% - from 15.1 / 1000 catheter day to 10.95 / 1000 catheter day), with an important reduction in 2016 (▼ 74% in relation to 2015 and ▼ 81% in relation to 2014 - from 15.1 / 1000 catheter days to 2.95 / 1000 catheter days). Conclusion: The triennium analysis demonstrated a reduction in the density of bloodstream infection associated with port-a-cath related to measures of health-care infection prevention.

[172]
Treatment options evaluation based on uroculture sensitivity in a teaching hospital of São Paulo

LEANDRO MALUF SOUZA; VALERIA CASSETTARI

HOSPITAL UNIVERSITÁRIO, UNIVERSIDADE DE SÃO PAULO (USP), BRAZIL

INTRODUCTION: Epidemiological studies are necessary to define the best empirical treatment options for urinary tract infections (UTI). OBJECTIVE: To evaluate treatment options according to the sensitivity of bacteria causing community-acquired UTI. METHODS: We analyzed all 3820 urocultures of emergency patients at a teaching hospital in São Paulo between 2015 and 2016, 110 replicate samples were disregarded. We stratified the urocultures in the age groups <15 years, 15-65 years,> 65 years, and verified the frequency of each microorganism. We calculated the sensitivity percentile of each antimicrobial for the bacteria, disregarding those tested in less than 97% of them. RESULTS: In all age groups, *E. coli* was the most prevalent agent (73.5%, 80.2% and 62.4%). The age group with the lowest therapeutic options was> 65 years, with good sensitivity of E. coli to amikacin (100%), amoxicillin/clavulanic acid (80%), ceftriaxone (85%), ertapenem (100%), nitrofurantoin (92%) and cefuroxime (74%). There was not good sensitivity for ciprofloxacin (65%), norfloxacin (65%) and TMP-STX (64%). In the age group 15-65 years, there was good sensitivity of E. coli to nalidixic acid (73%), amikacin (100%), amoxacilin/clavulanic acid (86%), ceftriaxone (94%), cefuroxime (86%), ciprofloxacin (84%), ertapenem (100%), nitrofurantoin (95%) and norfloxacin (84%). There was not good sensitivity for TMP-STX (68%). In the age group <15 years there was good sensitivity for nalidixic acid (87%), amikacin (100%), amoxacilin/clavulanic acid (86%), ceftriaxone (97%), cefuroxime (92%), ciprofloxacin (96%), ertapenem (100%), nitrofurantoin (96%), norfloxacin (96%) and TMP-STX (70%). CONCLUSION: Good options for empirical oral treatment in the range of <15 years are nalidixic acid, cefuroxime and nitrofurantoin. In the 15-65 range: nitrofurantoin, norfloxacin, cefuroxime, ciprofloxacin. For >65 years, cefuroxime and amoxicillin/clavulanic acid had a greater sensitivity than ciprofloxacin.

[173]
Process indicator: direct observation of opportunities for hands hygiene in neonatal ICU

LEANDRO MALUF SOUZA; ISA R SILVEIRA; TATIANE F TEIXEIRA; IONE C PICARELLI; CLEIDEVANE F SILVA; LUCIANA I S IIDA

HOSPITAL UNIVERSITÁRIO, UNIVERSIDADE DE SÃO PAULO (USP), BRAZIL.

Introduction: The Hospital Infection Control Committee nurse was responsible for training the medical and physiotherapy teams and a nurse from the neonatal ICU trained the nursing team. The training included the 5 HH moments, alcohol and soap consumption indicators, results of the first observation of HH, an educational video and photos of ICU professionals performing the 5 HH moments. The nursing professionals also took an on-line course on HH prepared by the hospital Teaching and Quality Service. Results: Direct observation in pre-intervention: 59.81% of the professionals performed the 5 moments of HH. Regarding the professional categories, nurses achieved the highest adherence (69.14%) followed by nursing technicians (64.78%), physiotherapists (57.43%) and physicians (52.51%). The rates for each of the 5 moments were: 1) before the contact with the patient: 61.17%, 2) before performing aseptic procedure: 47.83%, 3) after the risk of exposure to body fluids: 73.53%, 4) after contact with the patient: 73.33% and 5) after contact with the areas close to the patient: 35.45%. The post-intervention phase showed improvements in HH adhesion in all 5 moments (85.93%) and individually as follows: 1) 90%; 2) 90.91%; 3) 100%; 4) 96.55% and 5) 63.64%. The adherence for nurses, physiotherapists and physicians for HH were respectively 90%, 76% and 76.81%. Conclusion: The direct observation gave important information of the professionals' performance concerning the 5 HH moments. There was remarkable behavior change after the interventions, with improvement in all 5 moments. This gives light on the importance of permanent intervention strategies, in order to maximize the adhesion to the 5 HH moments.

[176]
Infections related to medical care profile in a interior hospital of Santa Catarina, Brazil

PATRICIA ALVES DE SOUZA[1,2]; ANA PAULA RIGON[2]; ANNA PAULA SCOZ ANTUNES[1]

1.HOSPITAL TEREZA RAMOS, LAGES - SC - BRASIL; 2. UNIPLAC, LAGES – STATE OF SANTA CATARINA, BRAZIL.

Introduction: The healthcare-related infections (HRI) represent a major problem for patient safety and quality of life, resulting in death, prolonged hospitalization, and avoiding high costs. HRI in Neonatal Intensive Care Units (NICU) are: acquired intrapartum (maternal and manifest origin in 48 hours of life), hospitalization, or 48 hours after discharge from hospital, with the exception of transplacental infections. There are several factors risk for HRI in a NICU: invasive procedures, length of stay, low birth weight, lack of hand hygiene, disinfection and cleaning of surfaces. Aim: Identify HRI profile in NICU from 2015 to 2016 in a large hospital in the state of Santa Catarina, south region of Brazil. Methodology: descriptive and retrospective study of data collected by the Hospital Infection Control Committee (CCIH) of this hospital, from January 2015 through December 2016. Results: A total of 24 cases of HRI were characterized in 2015, the most affected weight range was 1500 to 2499g (46%), 63% of the cases were laboratory bloodstream infections (Lab BI), most frequent microorganisms found 33% of Staphylococcus Aureus and 29% of Staphylococcus coagulase-negative were found. In 2016, a greater number of cases (31 total) were identified, 52% cases of BI with clinical diagnosis and Lab BI was 32% of the cases, identification of Staphylococcus aureus decreased to 19% and only 3 % Staphylococcus coagulase negative; Being that weight range of 1500 to 2499g decreased its incidence to 39%, equaling the weight range 1000 to 1499g. Conclusion: These indicators demonstrate that prevention and control measures of infections are fundamental in helping to reduce the spread of microorganisms, but the indices demonstrate the need for periodic educational activities.

[178]
Actions for the prevention and control of healthcare-related infections of hospital Tereza Ramos

PATRICIA ALVES DE SOUZA[1,2]; ANNA PAULA SCOZ ANTUNES[1]; GIORDANA DUTRA SARTOR[1]; ANA PAULA RIGON[2]

1.HOSPITAL TEREZA RAMOS; 2. UNIPLAC, STATE OF SANTA CATARINA, BRAZIL.

Introduction: The healthcare-related Infections (HCI) consist of persistent adverse events in health care. It´s known that the infection increases the length of hospitalization, morbidity and mortality in the country's health services as well as a considerable increase in costs. Hospital, thinking in preventive measures and in the patient´s health. Aim: Raise awareness about the prevention of HCI. Method: "First Week of prevention of HCI" occurred from 23 to 27 January/2017. Schedule encompassed: guidelines to visitors and caregivers (daily in the sectors by Hospital Infection Control Committee (CCIH), Patient Safety Center and Humanization Group), lecture on disinfection (for employees of the outsourced general services company), lecture on antibiotics (with a doctor of the institution for all employees), booths with: demonstration of hand hygiene (with posters and practice held by CCIH), "My 5 moments of hand hygiene" (organized a scenario with a doll on a stretcher with as due marks on the moments of hand hygiene) and the "Photographic moment for the Campaign #HTRcleanhands". Results: The guidelines with the visitors and caregivers have resulted positively in the actions in the sectors, this information was passed on by the managers. In the lecture of disinfection was observed intense participation of outsourced employees, as well as at the booth "My 5 moments of hand hygiene". The lecture of antibiotics was open to all staff and allowed updates on antibiotic therapy. The "photographic Moment for the #HTRdemãoslimpas Campaign" had a great participation of employees and generating more than 500 published photos on the social network in which the Hospital has a page. Discussion: these activities have generated broad dissemination and integration of staff, as well as involvement of trainees and of visitors and caregivers. This multidisciplinary interaction moved for necessary actions to control of HCI.

[179]
Relation between the nursing activities score and healthcare-associated infections in intensive care

MEIRE CRISTINA NOVELLI E CASTRO; JULIANA DA SILVA OLIVEIRA; MAGDA CRISTINA QUEIROZ DELL'ACQUA; CARLOS MAGNO CASTELO BRANCO FORTALEZA

BOTUCATU MEDICAL FACULTY, UNESP – SÃO PAULO STATE UNIVERSITY. BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction/Objectives: The use of nursing workload instruments, such as the NAS (Nursing Activities Score) in Intensive Care Units has become necessary as an aid for dimensioning and providing an appropriate distribution of nursing staff. The appropriate distribution of these professionals aims to guarantee the best allocation of Human Resources which are often scarce in public hospitals and also reach high-quality nursing assistance, consequently decreasing adverse events, such as healthcare-associated infections (HCAIs). We conducted a study aimed at identifying the relation between scores obtained from the NAS (used for distribution of human resources according to the complexity of care) with the incidence of HCAIs in adult Intensive Care Units (ICUs). Methods: We conducted an ecological study based on mean monthly NAS values and incidence of device-associated HCAIs from January 2010 through March 2015. Poisson regression models were applied to test associations. Analysis was performed in NCCS 9 software (Kaysville, Utah, USA). Results: Results from Poisson models of influence of NAs on the incidence of device-associated HAIs were as follows: ventilator-associated pneumonia (VAP), iRR=0.96; 95CI%=0.93-0.98; P=0.003; central line-associated bloodstream infections, iRR=0.99; 95%CI=0.96-1.03; P=0.78; catheter-associated urinary tract infections, iRR=1.00; IC=0.97-1.02; P=0.79); total HCAIs, iRR=0.99; IC=0.97-1.00; p=0.15. Conclusion: We found a negative association of NAS score with VAP, with 4% lower incidence for each additional NAS point. This argues for the effectiveness of adjusting the nursing staff according to the NAS instrument. In the studied period, there was the division of the Intensive Care Unit in assistance sites, according to the NAS obtained.

[180]
Results of a workshop for adherence to CLABS prevention and control practices

TIAGO CRISTIANO DE LIMA; DANIELA FERNANDA DOS SANTOS ALVES; ANGÉLICA OLIVETTO DE ALMEIDA; MARIANA DE JESUS MESZAROS; ANA PAULA GADANHOTO VIEIRA; LILIAN TEIXEIRA DIAS MONTEIRO; LUCIANA APARECIDA COSTA CARVALHO; PAULA DE MOURA PIOVESANA; NELISA ABE DA CRUZ DE ALMEIDA; FERNANDA TEIXEIRA OLIVEIRA; REGINALDO BISPO DE OLIVEIRA; MARCOS AURÉLIO BOES; TIAGO GIRALDI; THIAGO MARTINS SANTOS; RENATA FAGNANI; MIRTES LOESCHNER LEICHSENRING; MARIÂNGELA RIBEIRO RESENDE; LUÍS GUSTAVO DE OLIVEIRA CARDOSO

CLINICAL HOSPITAL, UNIVERSITY OF CAMPINAS (UNICAMP), CAMPINAS, SÃO PAULO STATE, BRAZIL.

Introduction/Aims: Central line-associated bloodstream infections (CLABs) are associated with excess lengths of stay, increased hospital costs and patient mortality. The aim is evaluate the results of workshop for adherence to CLABs prevention and control practices. Intervention: Quasi-experimental, pre-post-intervention study design was conducted in ICU of teacher hospital. One nurse specialist in infusion therapy, one nurse of infection control, two of the educational program nursing, one advanced practice nurse in infusion therapy, four clinical nurses and one nursing technician performed an intervention based in training for nursing professionals and physicians. We constructed practical stations with low-fidelity mannequins and devices for venous access. In the first station, we presented the catheters types and vascular access device planning, in the second, fixation and stabilization devices and in the third, we discussed the flushing and the routine of the administration set change. Clinical audit of the ICU patients was performed by three nurses pre and 30 days after the training. We did a descriptive analysis and discussed the results with the ICU team. Results: Clinical audits conducted before and after the training of professionals pointed to significant increases in care for maintaining the integrity of the central venous catheter coverage, reducing the number of lines with blood reflux and increasing adherence to routines of administration set change. There was a total reduction in the number of non-infusion lines of the multiple lumen catheters. Conclusion: Training and clinical audits can increase the adherence rate to the practices recommended for control and prevention of CLABs.

[181]
Impact of combined therapy regimens on the mortality of critically ill patients with sepsis

JULIO DELGADO CORREAL[1]; ADLA BARRETO[2]; ROGERIO RUFINO[1]; MARCOS FORNAZARI[2]; FERNANDO ANSELMO MEDEIROS[1]; PAULO VIEIRA DAMASCO[1]

1.STATE UNIVERSITY OF RIO DE JANEIRO; 2 RIO-LARANJEIRAS HOSPITAL. RIO DE JANEIRO, BRAZIL.

Introduction: Sepsis due to multidrug-resistant gram-negative bacilli (MDR-GNB) increase morbidity, mortality and costs. Objectives The aim of this study was to evaluate different antibiotic regimens for the treatment of sepsis due to MDR-GNB. Methods: It was done a observational, retrospective, multicentric study in three tertiary hospitals of Rio de Janeiro, from October 2015 to October 2016 to evaluate combined therapy (CT) regimens. Results: 98 patients with severe sepsis / septic shock who had MDR-BGN infections and who used CT against MDR-BGN were studied. It was an elderly population (73,2±1,7 years), with mean length of hospital stay was 41,2±10,2 days. This population was critical ill (simplified acute physiology score: 22,1± 2,3) and with many comorbidities (Charlson index: 8,9±0,3). Many infections were healthcare-associated (83,6%), mainly pulmonary (56,1%) and urinary sepsis (30,6%). The main microorganisms recovered in cultures were carbapenem-resistant Pseudomonas aeruginosa (21,4%) and carbapenem-resistant Klebsiella pneumoniae (13,2%). The mean time of antimicrobial therapy was 9,8±0,4days (mean±SD) and the rate of therapeutic failure was high (55,1%). Mortality associated with infectious episode also was high (50%). In the Kaplan-Meier survival analysis, the CT was slightly better than monotherapy with polymyxin B, and the CT with polymyxin / carbapenem shown best results than others alternatives utilized (tygeciclin / carbapenem, polymyxin B / beta-lactams, polymyxin B / aminoglycoside and carbapenem / aminoglycoside) (Log-rank test:0,03) Conclusions: we found better results in CT when polymyxin/carbapenem is used to treat MDR-GNB. The CT currently available in Brazil, seriously questions the benefits of this therapy and reinforces the need to prevent healthcare-associated infections and specifically measures to prevent the spread of MDRs in clinical settings. New antimicrobial against MDR-GNB are required urgently.

[182]
Control of the outbreak of *Clostridium difficile*-associated diarrhea: an experience report.

CARLOS MATHEUS PIERSON COLARES[1]; MARIUSA GOMES BORGES PRIMO[2]; DULCELENE SOUSA MELO[1]; SUELY CUNHA ALBERNAZ SIRICO[2]; MOARA ALVES SANTA BARBARA BORGES[2]; MICHELLE AUGUSTA DOS SANTOS[1]; ÁVILA CLICIA RIBEIRO COSTA[1]; ANACLARA FERREIRA VEIGA TIPPLE[1]

1.FEDERAL UNIVERSITY OF GOIÁS; 2. HOSPITAL DAS CLÍNICAS. STATE OF GOIÁS, BRAZIL.

Introduction: *Clostridium difficile* (CD) has been identified as an important etiologic agent of diarrheal diseases associated with previous antimicrobial use. The patient's response to the CD may change from asymptomatic carrier to pseudomembranous colitis. Control measures should be established immediately, since this microorganism, when sporulated, is resistant to disinfection routines. Objective: To report the outbreak of *Clostridium difficile* and the control measures adopted in an ICU of a university hospital in Goiânia - GO. Interventions: 1. Notification of cases to surveillance authorities; 2. Establishment of contact precautions for those involved; 3. Clinical-epidemiological and laboratory investigation of the cases; 4. Restructuring of exclusive professionals to assist patients; 5. Standardization of hydrogen peroxide for the disinfection of fixed surfaces and peracetic acid for floors, walls and bathrooms; 6. Training of the multiprofessional team emphasizing hand hygiene, daily bath of the patient with chlorhexidine gluconate 2% and standardization of disinfectants; 7. Reassessment of the protocol for the rational use of antimicrobials in the ICU; 8. Issuance of reports to surveillance agencies. Results: Four patients who were hospitalized in the ICU, using antimicrobials for sepsis, developed symptoms such as: liquid stools with frequency ≥ 3x / day, abdominal distension, leukocytosis and hypoalbuminemia. The index case was diagnosed with pseudomembranous colitis by colonoscopy and the other cases were confirmed by clinical-epidemiological criteria. One patient died due to the severity of the underlying disease and complications of diarrhea and the other patients were discharged from the ICU with infection cure criteria. Conclusions: The measures adopted against CD cases were efficient, since after 20 days the outbreak was terminated. This episode strengthened the dialogue between the teams, leading to improved assistance.

[183]
Management of surgical instruments by Brazilian loaner companies

LUIZ ANTÔNIO PEREIRA[1]; LILLIAN KELLY OLIVEIRA LOPES[1]; DAYANE MELO COSTA[2]; KAREN VICKERY VICKERY[3]; ROEL BELTRAN CASTILLO[4]; HONGHUA HU HU[3]; ANACLARA FERREIRA VEIGA TIPPLE[1]

FACULTY OF NURSING, FEDERAL UNIVERSITY OF GOIAS, GOIANIA, BRAZIL; SURGICAL INFECTION RESEARCH GROUP; FACULTY OF MEDICINE AND HEALTH SCIENCES, MACQUARIE UNIVERSITY HOSPITAL, MACQUARIE UNIVERSITY, SYDNEY, AUSTRALIA

Introduction: The practice of "supply companies" loaning surgical instruments to hospitals is complex and challenging, but is increasing worldwide. However, company administration and instrument handling protocols have not been assessed. We evaluated management practices within Brazilian loaner companies. Methods: A cross-sectional self-administrated survey with multiple choice and short answer questions was applied. The questionnaire, was evaluated by experts in Brazil. Ethics Committee approval was obtained. Results: Eight loaner companies' managers completed the questionnaire. Most companies supplied loaner sets to <100 hospitals and exclusively for orthopaedic surgeries. The minimum advanced time for delivery of instruments was four hours before the surgery for approximately 1/5 Brazilian hospitals, however most required ≥ 24 hr; stainless steel or aluminium trays were frequently used (43%); Standard Operating Procedure (SOP) for reprocessing was not provided by 14.3% companies, and significantly more SOP were national legislation based; company-hospital-company were the most tracked instrument steps, and was mainly computer based. Cotton wipes moistened with alcohol were used to "decontaminate" instruments during checking of sets by 62.5% of the companies. Conclusion: A failure to meet recommended practices regarding minimum delivery time, transport container/vehicle, SOP provision, reprocessing/decontamination were identified. These failures can adversely affect instrument reprocessing, which consequently negatively impacts surgical patient safety.

[186]
Hepatitis b and influenza vaccination scheme among community health workers in Goiânia-GO.

CARLOS MATHEUS PIERSON COLARES; HÉLIO GALDINO JÚNIOR; ANACLARA FERREIRA VEIGA TIPPLE

FEDERAL UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: Immunization of health professionals is essential to reduce the biological risk in professional activity. There are evidence that, in addition to physical and psychological risks, Community Health Workers (CHW) are also at biological risk. The Hepatitis B vaccine and annual influenza vaccine is offered by the public service and is recommended for all health professionals, including CHW. Objectives: To verify the vaccination situation of CHW in a district in the city of Goiânia-GO. Methods: A quantitative cross-sectional study was carried out in the southwest sanitary district. 30 CHW participated in the study. After ethical considerations, a questionnaire containing socio-demographic data and evaluation of the vaccination schedule for Hepatitis B and Influenza was applied. The professionals' vaccines card was requested to check the dosages administered. The data were analyzed by the Statistical Package for the Social Sciences (SPSS® 21.0) and presented in descriptive statistics. Results: 100% of participants in the study were female, with more than 10 years of activities (53.3%), and 80% don't received training on biological risk before the beginning of its activities as CHW. 56.7% (17/30) reported receiving all three doses of the vaccine. Of these, 46.7% (14/30) had the proof of the three doses. 40% (12/30) did not present any dose on the vaccine card. 50% (15/30) reported having performed antiHBS and 36.7% (11/30) reported being immunized. As for the Influenza vaccine, it was identified that: 10% (3/30) received the vaccine in 2017; 33.3% (10/30) received in 2016; 13.3% (4/30) received the last dose in 2015 and 33.3% (10/30) had no dose on their vaccination cards. Conclusions: It is concluded that these professionals are at risk of developing diseases that can be prevented through effective vaccination. In addition, the low adherence to influenza vaccination can result in the spread of infection by professionals in the community in their actions.

[188]
Challenge of professional formation of nurse in the control of infection

ALINE MARINHO DANTAS; MIRIAM MARINHO CHRISZOSTIMO

UNIVERSIDADE FEDERAL FLUMINENSE (UFF), NITERÓI, BRAZIL.

The project with the theme of professional training of nurses is based on subjects pertinent to research, namely: Training management and professional qualification: health and education; In the lines of research: nursing, education, citizenship training and professional qualification and production of knowledge about infection control in health care with emphasis on skills. The objectives of this project are to contribute to the studies related to the professional training of nurses with social commitment; Discuss the curriculum of the undergraduate course that forms the nurse with social commitment in the prevention and control of infection; To understand the conception of the student and the teacher about the construction of the knowledge in the professional formation of the nurse with social commitment in the prevention and control of infection; and to analyze the relationship between higher education, pedagogy, professional qualification, competence and knowledge production in the prevention and control of infection related to health care. The methodology of this study contemplates the quanti-qualitative approach, having as participants' students and professors of the School of Aurora Afonso Costa of the Fluminense Federal University. The instruments of data collection used were questionnaires and interviews. Data analysis was performed through statistical programs and categorization according to the chosen approach. The ethical precepts were respected, in view of the opinions approved by the research ethics committee of the Faculty of Medicine (CMM) and University Hospital Antônio Pedro (HUAP).In this context, it could be verified that vocational training provides subsidies to guide, reorient professional practice and that qualification and knowledge guide the assistance insofar as they complement the training.

[189]

Is amikacin effective in treating urinary tract infection by carbapenem-resistant *K. pneumoniae?*

THAIS CRISTINA GARBELINI SALLES; NAYARA LARISSA DE ALMEIDA MOURA; EDUARDO ALEXANDRINO SERVOLO DE MEDEIROS

HOSPITAL SANTA HELENA/NEXT, SÃO PAULO, BRAZIL.

Introduction Carbapenem-resistant Klebsiella pneumoniae (CRKP) infections have emerged and treatment is challenging, which has led to the resurgence of interest in aminoglycosides. The objective of this study was to evaluate the treatment success rates associated with the administration of at least 3 days of amikacin for the treatment of CRKP bacteriuria. Methods Medical records from patients hospitalized at Hospital Santa Helena/NEXT with physician-diagnosed CRKP urinary tract infection who received monotherapy with amikacin between January 2016 and December 2016 were studied. Treatment success was microbiologic clearance, defined as having a follow-up urine culture from which CRKP was not isolated. Cases were excluded if the patient received two different active antimicrobials, if amikacin was received for less than 3 days and if CRKP was previously isolated from an additional anatomic site. Secondary outcomes included development of CRKP bacteremia, nephrotoxicity and overall 30-day mortality prior to urine culture results. Results Sixteen subjects were included. The mean age was 73,19 years and 75% were female. Amikacin susceptibility was identified in 81,25% of the isolates. Patients were treated for a median of 5,75 days. Thirteen patients had a follow-up urine culture and microbiologic clearance was documented in a 100% of these cases. Among the three subjects without a follow-up culture, 66,6% showed improvement of symptoms. Of the 16 cases, 62,5% had preexisting renal dysfunction. Fourteen subjects were analyzed for nephrotoxicity and 28,57% developed acute kidney injury. Twelve (75%) patients were discharged and 25% died within 30 days. Conclusion Amikacin is effective in eradicating CRKP from urine. As such, it retains an important role as directed monotherapy for urinary tract infections due to CRPK. Concomitant nephrotoxic drugs and prolonged duration of therapy should be avoided in patients with recognized risk factors for acute renal injury.

[190]
Bloodstream infection in neonatal intensive care units

ALEXSANDRA GOMES RESENDE DE SOUZA DA SILVA[1]; SERGIANE BISINOTO ALVES[2]; ELISÂNGELA EURÍPEDES RESENDE GUIMARÃES[3]; DULCELENE DE SOUSA MELO[4]; FLAVIANE CRISTINA ROCHA CÉSAR[5]; NATÁLIA SANTANA NASCIMENTO[1]; SILVANA DE LIMA VIEIRA DOS SANTOS[6]; MARIA AUXILIADORA CARMO MOREIRA[7]

POST-GRADUATE PROGRAM IN HEALTH SCIENCES, FACULTY OF MEDICINE, FEDERAL UNIVERSITY OF GOIAS, MUNICIPAL HEALTH DEPARTMENT OF GOIANIA/ CLINICS HOSPITAL, FEDERAL UNIVERSITY OF GOIAS; NURSING SCHOOL, PONTIFICAL CATHOLIC UNIVERSITY OF GOIAS /FACULTY OF NURSING, FEDERAL UNIVERSITY OF GOIAS / CLINICS HOSPITAL, POST-GRADUATE PROGRAM IN NURSING, FACULTY OF NURSING. STATE OF GOIÁS, BRAZIL.

Introduction: Bloodstream infections (BSI) occurrence bring negative consequences, especially for high risk patients as neonates in intensive care units (ICUs). Birth weight is one of the several risk factors associated with these infections. Aims: To determine the incidence of laboratory confirmed BSI according to the birth weight range, and the antimicrobial susceptibility profile of the infectious agents. Methods: Cross-sectional study carried out with cases of BSI reported on the national healthcare associated infection (HAI) electronic form from all neonatal ICU from a Brazilian capital in 2016. Results: A total 231 BSI episodes were reported from ten neonatal ICU in 2016. The highest annual incidence-density was 9.05 per 1,000 catheter-days within the birth weight range 1,000 to 1,499g, followed by 8.84 for the range 1,500g to 2,499g; 8.76 for the range > 2,500g; 7.64 for the range 750-999g; and 3.11 for the range < 750g. There was a predominance of Gram negative bacteria, especially K. pneumoniae (34.7%) and Escherichia coli (12.2%). Coagulase negative Staphylococcus predominate (13.6%) for the Gram positive. The resistance of E. coli and K. pneumoniae to 3rd and/or 4th generation cephalosporin were 55.5% and 58.8%, respectively, and 85% of coagulase negative Staphylococcus were resistant to oxacillin. Conclusions: BSI was grater for the birth weight range 1,000 to 1,499g, and cephalosporin resistant Gram negative bacteria the most isolated. However, it is inferred that other factors may have contributed to BSI, such as length of stay, comorbidity, immature immune system, exposure to invasive procedures and antimicrobial treatment. Such variables should be identified and monitored to help implementing effective measures that can reduce infections and decrease morbidity and lethality rates in low birth weight infants.

[191]
Incidence of bloodstream infection in adult intensive care units

ALEXSANDRA GOMES RESENDE DE SOUZA DA SILVA[1]; SERGIANE BISINOTO ALVES[2]; ELISÂNGELA EURÍPEDES RESENDE GUIMARÃES[3]; FLAVIANE CRISTINA ROCHA CÉSAR[4]; NATÁLIA SANTANA NASCIMENTO[1]; SILVANA DE LIMA VIEIRA DOS SANTOS[5]; MARIA AUXILIADORA CARMO MOREIRA[6]

POST-GRADUATE PROGRAM IN HEALTH SCIENCES, FACULTY OF MEDICINE, FEDERAL UNIVERSITY OF GOIAS; MUNICIPAL HEALTH DEPARTMENT OF GOIANIA/ CLINICS HOSPITAL, FEDERAL UNIVERSITY OF GOIAS; NURSING SCHOOL, PONTIFICAL CATHOLIC UNIVERSITY OF GOIAS; POST-GRADUATE PROGRAM IN NURSING, FACULTY OF NURSING. STATE OF GOIAS, BRAZIL.

Introduction: Bloodstream infections (BSI) are associated with high rates of morbidity and mortality in critically ill patients. Aims: To determine the incidence-density of laboratory confirmed BSI in adult intensive care units (ICUs), and identify the infectious agents and their antimicrobial susceptibility profile. Methods: Cross-sectional study carried out with cases of BSI reported on the national healthcare associated infection (HAI) electronic form from all adult ICU from a Brazilian capital in 2016. Results: Monthly notification was performed by all 41 healthcare facilities with adult ICU in the capital. The incidence-density of laboratorial confirmed BSI in 2016 was 3.19 per 1,000 catheter-days, ranging from 0 to 19.9. The most prevalent microorganisms were coagulase negative Staphylococcus (18.7%), Klebsiella pneumoaniae (17.1%), Staphylococcus aureus (11.4%), Acinetobacter spp. (8.9%), and Pseudomonas aeruginosa (8.2%). 52.7% and 13.8% of S. aureus were resistant to oxacillin and vancomycin, respectively. For coagulase negative Staphylococcus, 93,2% and 1,6% were resistant to oxacillin and vancomycin, respectively. For Gram negative bacteria, resistance to carbapenem was detected for 38.5% and 89.3% of P. aeruginosa and Acinetobacter spp, respectively. 50% and 81.5% of K. pneumoniae were resistant to carbapenem and 3rd and/or 4th generation cephalosporin. Conclusions: Even though notification was performed by all ICU, some of them have constantly reported (zero) 0% of laboratory confirmed BSI, which may indicate deficiency in the active search of cases. Although the incidence-density of laboratory confirmed BSI in the this capital is below the national rate, prevention and control strategies investments are still necessary, as these infections bring severe negative health, social and economic consequences. Permanent educational activities, bundles implementation, and municipal managers feedback should be considered for improving this scenario.

[193]
Multimodal strategy for the promotion of hand hygiene

SARAH FRANÇA VILLELA[1]; RAQUEL LEAL REIS[1]; THAYNARA GABRIELLA SILVA CUNHA[1]; ALYNE COELHO MOREIRA MILHOMEM[2]; KARINE MARQUES COSTA DOS REIS[2]

1.ESCOLA SUPERIOR DE CIÊNCIAS DA SAÚDE; 2. SECRETARIA DE ESTADO DE SAÚDE DO DISTRITO FEDERAL, BRAZIL.

Introduction: Hand hygiene (HH) is one of the main ways for the prevention of healthcare-related infections. The World Health Organization (WHO) shows as a proposal to encourage and improve adherence to hygiene of the hands the Multimodal Strategy of HH, that points the main opportunities for sanitizing hands for health professionals during the realization of care to patient safety and professional. Objective: to Analyze the accession of HM practice professionals, according to the Multimodal Strategy Of HM of WHO. Method: descriptive study of a quantitative approach in public hospital of the Distrito Federal, Brazil. Data collection took place through the form of observation HH opportunities, standardized by the WHO, focusing on five times, in the months of January and February 2017. Results: a total of 215 comments, with 40.9% percent of membership of the HH, being that the nurses had higher (61.4%), followed by doctors (58.7%), physiotherapists (24.4%) and nursing (22.5%). Most of the professionals (85.2%) used alcohol gel to HM 70%. As for the opportunities, the higher rate of HH was after contact with body fluids (80%), followed by the opportunities: after contact with patient (48.7%), before contact with patients (35.2%), before aseptic procedure (31.6%) and after contact with nearby (26.3%).Conclusion: The present study indicated a low rate of adhesion to HH by health professionals, and nurses presented the highest adhesion when compared to the others. It was also identified a higher adherence after risk of exposure to body fluids and after contact with patients, suggesting a greater concern of the professional in protecting himself in relation of the patient. It is concluded that investments and interventions with the objective of increasing the membership of the HH are required.

[194]
Risk factors for healthcare associated infection: a cohort of oncologic patients

ISABELLA REGINA DA CUNHA BARROS[1]; JUREMA TELLES DE OLIVEIRA LIMA[2]; MARIA JÚLIA GONÇALVES DE MELLO[2]; NAIÁ DE MIRANDA NEVES[1]; CAMILA JACÓ RAMOS[1]

FPS (PERNAMBUCAN HEALTH FACULTY); IMIP (THE PROFESSOR FERNANDO FIGUEIRA INTEGRAL MEDICINE INSTITUTE), STATE OF PERNAMBUCO, BRAZIL.

Background: Healthcare associated infections (HAIs) are responsible for morbidity and mortality among oncologic patients. The aim of this study was to determine the risk factors and the profile of HAI in patients admitted in cancer center. Objective: To determine the risk factors and the profile of infection related to health (HAI) in patients admitted to the IMIP. Methods: a prospective cohort study approved by the institution's ethics committee. It was completed standardized initial assessment and conducted telephone follow-up after thirty days and sixty days from hospital discharge records and supplemented with analysis and hospital information system. Data were analyzed using Cox proportional hazards models. Results: 220 patients between 20 and 87 years of IMIP Adult Oncology service, from December 2015 to June 2016. Among the 220 cancer patients included in the study, the prevalence of HAI was 73.6% and the mortality was 40.4%. 90% percent of patients were initially treated at emergency service. Elderly patients had a higher risk of developing HAI($p < 0.001$) as well as people who had longer period of hospitalization($p < 0.001$), advanced cancer, people who reported fever on admission, who were diagnosed with Febrile neutropenia($p < 0.001$) .The most frequent infections were urinary tract infection, followed by pneumonia and bloodstream infections, which are caused most commonly by Gram-negative microorganisms, and Klebsiella pneumoniae ESBL the most common. Conclusions: HAI is a prevalent problem in the whole course of cancer care with significant morbidity and mortality. Health professionals, especially in the emergency department, must be able to identify and appropriately treat HAI. Bacterial multidrug resistance was prevalent, and may be in the future because of great loss of scientific advances made in the oncology area to date. Institutional policies for prevention, surveillance and HAI therapy must be priority in cancer population

[195]

The effect of chlorhexidine on the selection of resistant microorganisms: systematic review

MARCIA MARIA BARALDI[1]; JULIANA RIZZO GNATTA[2]; MARIA CLARA PADOVEZE[3]

OSWALDO CRUZ GERMAN HOSPITAL; UNIVERSITY HOSPITAL OF UNIVERSITY OF SAO PAULO; SCHOOL OF NURSING OF UNIVERSITY OF SAO PAULO, BRAZIL.

introduction/objectives: the use of antimicrobial soap is recommended as an alternative for hand hygiene using alcohol-based products in specific situations. chlorhexidine gluconate (chg) is one of the most widely antimicrobial soaps. however, the impact of using the chg soap for routine hand hygiene on the selection of resistant microorganisms is not fully understood. this study aimed to identify the evidence regarding the potential association of the routine use of chg and the selection of resistant microorganisms. methods: a systematic review was performed by using the Joanna Briggs Institute (JBI) method. data collection was carried out by two independent researchers, in January 2017. search strategies for the databases (Embase, CINAHL, LILACS, MEDLINE, Cochrane Library, Scopus and Web of Science) comprised index terms. gray literature was investigated by searching on Google scholar and ProQuest. studies in English, French, Spanish, and Portuguese with no time restriction were included. the review included randomized or non-randomized trials, experimental and laboratorial studies, cohort, interrupted time series, non-controlled before-after. letters, notes, conference proceedings, and opinion articles were excluded. this review considered studies that include as outcomes: identification of resistant microorganism based on minimum inhibitory concentration (mic) and minimum bactericidal concentration (mbc). data extraction was performed by JBI_Mastari tool. quality assessment used was JBI Critical Appraisal Checklist according to study design. results: from the 533 primarily identified, 12 to be included. most of the studies identified a correlation between the use of chg and the presence of resistance genes (qacA /qacB) or with the increase of the mic. conclusions: the select studies suggest that there is association with routine use of chg and selection of resistant microorganisms. the chg should be used with cautions to avoid the selection pressure.

[197]
Outbreaks of healthcare-associated infections (HAI) reported in the state of São Paulo, 2011-2016

GERALDINE MADALOSSO; DENISE BRANDAO DE ASSIS; VANIA LUCIA MELO DE OLIVEIRA; YARA Y YASSUDA

DIVISION OF HOSPITAL INFECTION/EPIDEMIOLOCAL SURVEILLANCE CENTER/SAO PAULO STATE HEALTH DEPARTMENT, BRAZIL.

According to the World Health Organization, an outbreak of healthcare associated infection (HAI) is defined as an unexpected or unusual increase in cases of known HAI or the emergence of cases of a new infection or new pathogens. The occurrence of an outbreak in healthcare facilities can be disastrous, with significant damage in morbidity and fatality rate and can generate enormous stress among healthcare workers (HCW) and patients. The greater potential impact of prevention is the earlier the outbreak identification is highly determined by the prompt response capability of the teams involved. During an outbreak, the infection control team should lead the research process, developing the analysis of the phenomenon, providing institutional counseling and training of the HCW involved. In order to monitor the outbreaks and provide technical support, the Division of Hospital Infection of Epidemiological Surveillance Center has made available the online report form that contains basic information on the number of cases, where the outbreak occurred and which, after completion, is directed to local authorities to monitor the outbreak. In the period between 2011 and 2016, there was 151 occurrences, 10 in 2011 and 33 in 2016. Among the microorganisms involved were K. pneumoniae (34%) and A.baumanii (18%), with 60% of outbreaks involving multidrug-resistant organisms, enterobacterias and non-fermenting, carbapenem-resistant gram-negative bacilli. Central line associated bloodstream infection is the main topography (41%) and 70% occurred in Intensive Care Units, the highest proportion in Adult ICU. In principle, all HAI outbreaks are preventable, which highlights the importance of investigating them as early as possible. It is important to keep in mind that any suspicion at the local level about the possible occurrence of an outbreak should be reported immediately to the public health authority through the established communication channels.

[198]
The impact of rapid molecular test (septifast®) to reducing antimicrobial use in nosocomial sepsis

CRISTHIENI RODRIGUES[1]; MIRLANE S SANTOS[2]; HELIO CAIAFFA FILHO[2]; CECILIA E CHARBEL[2]; LUCIANE SARAHYBA DA SILVA[2]; FLAVIA ROSSI[2]; MARIA RENATA G FRANCO[2]; RINALDO FOCACCIA SICILIANO[1]; TANIA MARA VAREJAO STRABELLI[1]

1.INCOR-HC-FASCULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO (USP); 2. DLC-HC-FMUSP, SÃO PAULO, BRAZIL.

Background: Sepsis is a "life-threatening" organ dysfunction caused by severe deregulation of the immune host response triggered by infection with high morbidity and mortality. Early identification of causative pathogens is crucial for the rapid adjustment of empirical antimicrobial therapy in sepsis and can provide reduction in the long duration of exposure to unnecessary broad-spectrum antimicrobial therapy and its deleterious consequences. Methods: We performed a randomized controlled trial in adults with suspect nosocomial sepsis in a cardiac hospital. Patients were randomly into two groups Both groups collected standard blood culture (BC) and multiplex real-time PCR-LighCycler® SeptiFast (SF). In intervention group, blood SF samples were processed immediately and results reported to medical researcher (in 6 to 12 hours), who adjusted antimicrobial therapy. In observational group, SF sample was stored for later analysis and antimicrobial therapy guided by BC results (after 48-72 hours). Time to adjust empiric antimicrobial therapy, antimicrobial consumption and mortality was measured in both groups. Results: One hundred and seventy-four adults patients were included. Fifty six (32%) samples were positive and 118 (68%) were negative both by SF and BC (85% concordance). SF group had 26% positive results and BC group, 24%. Sensitivity, specificity, positive and negative predictive of SF in bacteremia were 73%, 89%, 67% and 92%, respectively. Antimicrobial therapy adjust was similar in both groups (p=0,382) but faster in SF group (8h versus 60h p<0,001). SF group patients had 27% lower antimicrobial consumption (p=0,013). Mortality was similar in both groups (p=0,415). Conclusions: Using a microbiological rapid diagnostic test had a positive impact in sepsis treatment and should be considered as a strategy in antimicrobial stewardship programs.

[199]
Increasing prevalence of carbapenem-resistant enterobacteriacae and high consumption of carbapenemics

THAÍSA NAHU NAHU DE ARAÚJO[1]; MARIA DO CARMO AMARAL[1]; DENISE P RIBEIRO[1]; GERALDO RENATO DE PAULA[2]; JULIO CESAR DELGADO CORREAL[3]

1.SALGADO FILHO PUBLIC HOSPITAL; 2. FEDERAL FLUMINENSE UNIVERSITY; 3. STATE UNIVERSITY OF RIO DE JANEIRO, BRAZIL.

Introduction: The emergence of carbapenem-resistant Enterobacteriacae (CRE) associated to treat life-threatening infections in critical ill patients is a serious global public health problem. In many cases, the therapeutic options are limited or nonexistent, causing increase of healthcare-associated costs and mortality. The indiscriminate or irrational use of carbapenems favors selective pressure on strains that increases the rate of transference of resistance genes to many antibiotics. Objectives: The objective of this study was to demonstrate if there was a correlation between the prescription of carbapenemics and the increase in the prevalence of CRE in a critical settings of Rio de Janeiro from 2012 thought 2016 Methods: It was done an observational, retrospective, cohort study evaluating carbapenem use in critically ill patients, using the classification of the defined daily dose establish by World Health Organization (ATC/DDD) to found any correlation with the prevalence of CRE from 2012 to 2016 in a public hospital. Results: In total we analyze data from a cohort with 15,596 patient-days. Progressive increases in the DDD of carbapenems were observed from 2012 thought 2016 (16,8 to 24,1x100 patients-day [43,4%]). At the same period time we found increases in the prevalence of CRE isolates (9,7 to 13,8 x1000 patients-day [42,2%]). The Spearman's Rank correlation coefficient between carbapenems consumptions and the CRE prevalence in the period time were positive and significantly (rho = 0,13 for the mean DDD of meropenem, and rho = 0,09 for the mean DDD of carbapenemics). Conclusions: We noted a worrying increase in the prescribing of carbapenems and in the adjusted prevalence of CREs in the analyzed period, and both had a positive correlation. The hospital pharmacist, through the critical analysis of the prescription, can minimize and contain the emergence of outbreaks of cases of CRE.

[200]
Implementation of multimodal strategy to improve adherence to hand hygiene in a university hospital

LUCIANA CARVALHÊDO FRAGOSO; JORGE LUÍS NOBRE RODRIGUES; EVELINE SANTANA GIRÃO; GERMANA PERDIGÃO AMARAL; MARIA IZABEL ELOY OLIVEIRA SENA; GEOVANIA MACIEL DE SOUSA; MÔNICA CARDOSO FAÇANHA; FRANCISCA DE MELO BESERRA

HOSPITAL UNIVERSITÁRIO WALTER CANTÍDIO, STATE OF CEARÁ, BRAZIL.

Introduction / Objectives: To promote a strategy to improve hand hygiene adherence with the aim of preventing and minimizing infections related to health care, with a focus on patient safety and health promotion of the agents involved in care. Method: It was implemented from 2015 the installation of devices with alcohol gel on the bed and in the wards doors , as well as sink with water, soap dispenser and towel paper door inside all the infirmaries, reminders of the stages of the five moments Hand hygiene inside the units, visual reminder on banner and adhesive on the sinks next to the care; Permanent education on the importance of hand hygiene for employees has been intensified since 2015 and for patients and visitors in 2016, promoting the empowerment of the protagonists directly involved in care; Active observation of the Nurses of the hospital infection service control, through the observation from the use of the National Sanitary Surveillance Agency' protocol regard the opportunities for hand hygiene and actions performed by health professionals. There was a monthly meeting with the health care workers to show the hospital infection indicators and the adhesion to hand hygiene. Results: After a five-year follow-up, we observed a reduction in the annual rate of infection related to health care in 2012 (7.17%), 2013 (7.32%), 2014 (8%), 2015 (6%) and 2016 (6%). Conclusions: The use of actions aimed at the implementation of the multimodal strategy in the health service showed a positive impact on the behavioral change of the care protagonists after the availability of alcohol gel at the bedside and the intensification of the permanent education to the health professionals and companions with Reduction in the overall rate of hospital infections.

[201]
Plan for control and prevention of multidrug-resistant organisms (MDRO) of the state of São Paulo

DENISE BRANDAO DE ASSIS; GERALDINE MADALOSSO; VANIA LUCIA MELO DE OLIVEIRA; YARA Y YASSUDA

DIVISION OF HOSPITAL INFECTION/EPIDEMIOLOCAL SURVEILLANCE CENTER/SAO PAULO STATE HEALTH DEPARTMENT, BRAZIL.

According to the World Health Organization, antimicrobial resistance represents a serious threat to public health. The multidrug-resistant organisms (MDRO) are normally found in hospital environment due to selective pressure of the antimicrobial used on a great scale. These organisms cause infections that are associated with high mortality rates and they have the potential to spread widely. The Division of Hospital Infection of Epidemiological Surveillance Center of Sao Paulo State Health Department has conducted, evaluated and reported hospital associated infection (HAI) rates in healthcare setting since 2004. Between 2009 and 2014, it was observed the enhancement of antimicrobial resistance in isolates of A. baumanii and Carbapenem-resistant Enterobacteriaceae (CRE). Due to this scenario in 2016 a Plan for Prevention and Control of MDRO had been implemented on the healthcare settings of state of São Paulo aiming to improve the surveillance, analyses epidemiological data of antimicrobial resistance and define strategies for control and prevention of MDRO in the healthcare settings. The method was provide training and education of the basic elements for control and prevention of MDRO and the educational material. An event to launch the action plan was carried out in May 2016 for the stakeholders, including healthcare facilities and public health, in which was offered technical support for the implementation of such plan in the local level: guidelines on surveillance, laboratory, outbreak investigation, rational use of antimicrobial and infection prevention practices, by stimulating the education and training for regional healthcare personnel about preventing transmission of these organisms. Also providing backup material (such as evaluating instruments, worksheet for data consolidation, CD with lectures and videos, posters and stickers) released on official website. The governmental level ought to implement actions on HAI control and prevention.

[202]
The teaching of biosafety in private higher nursing courses in Brazil

JÚLIA ALVES SILVA[1]; ELISÂNGELA RODRIGUES BOEIRA[1]; ANACLARA FERREIRA VEIGA TIPPLE[1]; SILVANA DE LIMA VIEIRA DOS SANTOS[1]; ADENÍCIA CUSTÓDIA SILVA E SOUZA[2]; HELINY CARNEIRO CUNHA NEVES[1]

1.NURSING FACULTY OF FEDERAL UNIVERSITY OF GOIÁS; 2. PROFESSOR OF SCHOOL OF SOCIAL SCIENCES AND HEALTH, PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: the lack of knowledge of professional about Biosafety has a great influence on the low adherence to preventive measures and on the occurrence of occupational accidents. Therefore, there is a need to build a well-established knowledge about the subject in nursing undergraduate courses to ensure safety. Objective: to characterize the teaching of safety and security measures in undergraduate courses in Nursing of Private Higher Education Institutions (HEI) in Brazil. Method: qualitative, descriptive and exploratory study of documentary analysis. The information of the HEI was accessed through the website of the Ministry of Educational and Culture and the website of the institutions. Of the 619 nursing courses identified, 44 were included because they presented the menus and subject plans on the sites. The data were collected in the menus and disciplinary plans from September 2016 to February 2017. After the data collection, the data were analyzed with the aid of Atlas TI software and discussed through the reference of the patient's safety, occupation. Results: data were organized into two categories: "Teaching of prevention measures and occupational hazards in the workplace" and "Ethical, legal, conceptual and epidemiological aspects of biosafety". We have identified that the disciplined address the most targeted protection for the worker, focusing on occupational health and occupational hazards. Although standard precautions are included, little emphasis is placed on pre-and post-exposure care in the event of an accident involving biological material, sharps disposal, hand hygiene, and the processing of health and safety products for the patient. Conclusions: we conclude that there is a need for strong teaching in relation to safety in private HEI Nursing courses to promote behaviour and decision making in the academic and professional future towards protections in the practice of care.

[203]
Control of vancomycin resistant enterocci outbreaks in hospitals: an evidence review

SUSANA ARIANE DE SOUSA VIANA[1]; CARLOS HENRIQUE CAMARGO[2]

1.INESP FACULTY; 2. INSTITUTO ADOLFO LUTZ, SÃO PAULO STATE, BRAZIL.

Introduction and objective: Vancomycin Resistant Enterocci (VRE) are pathogens globally spread in hospitals, as causative agents of infections and colonization. VRE outbreaks in hospital settings are frequently reported, but the measures associated with the control of outbreaks are not homogenous. This study aimed to evaluate the international literature to identify the measures associated with control of VRE outbreaks in hospital settings. Methods: A literature review was undertaken on the main medical databases (Pubmed, ScienceDirect, Scopus, Scielo, outbreak-database.com), searching for articles published between 1992 and 2015 with the terms ((Sanitizer* or Disinfectant* or Disinfection or Desinfecção or Higieniz* or clean* or limpeza) and (hospital*)) AND ("enterococo resistente a vancomicina" OR ERV OR VRE). Frequencies of measures associated with control (or not) of VRE outbreaks were compared. Results: After exclusion of duplicates, a total of 85 studies were included; one outbreak was reported in two articles; thus, the final number of outbreaks was 84, from which 57 (67.9%) reported "controlled outbreak" (CO)", 6 (7.1%) reported "not controlled outbreak" (NCO) (based on own authors' conclusions and/or on incidences); remaining 21 (25%) studies did not report the outbreak outcome. The main measures reported in the outbreaks reported as controlled were: isolation precautions (n=39; 68.4%); patient cohorting (n=38; 66.7%) and hand higienization (n=35; 61.4%); multiple measures were cited in most (n=54; 94.7%) of the reports. Measures associated with CO, compared to NCO were environmental cleaning, (p=0.03); isolation precautions (p=0.04) and patient cohorting (p=0.05). Conclusion: Multiple measures, as environmental disinfection, isolation precautions, and patient cohorting were reported as effective in control VRE outbreaks; however, publishing bias resulting from the large proportion of articles showing success in controlling VRE outbreaks must be addressed.

[205]
The nosocomial infection control surveillance and the incidence reduction of bloodstream infections

MILTON SOIBELMANN LAPCHIK - PROF. DR.; VALQUIRIA OLIVEIRA BRITO; MARIA GOMES VALENTE; INGRID WEBER NEUBAUER; MARIA ANGELA KFOURI; MARIA DO CARMO SOUZA; FERNANDA ZENAIDE

COORDENAÇÃO DE VIGILÂNCIA EM SAÚDE (COVISA), SÃO PAULO, BRAZIL.

Introduction: The nosocomial infection control committee in the city of Sao Paulo, denominated Nucleo Municipal de Controle de Infecção Hospitalar (NMCIH/CCD/COVISA) was created in 2004, coordinating the nosocomial infection control surveillance with 156 hospitals. Prevention and the control of bloodstream infection associated with central vascular catheter (BSI) has been a priority of the surveillance program including adults, pediatrics and newborn patients from the intensive care units. Objectives: Describe the incidence of bloodstream infection associated with central vascular catheter (BSI) from the intensive care units , from 2011 to 2016, including adults, pediatrics and the newborn patients. Methods: The definitions for BSI was the same from NHSN project. The incidence of BSI in adult ICU, pediatric intensive care unit (PICU) and neonate intensive care unit (NICU) was calculated with information sent from the nosocomial infection control committee of each hospital. The results analysis and divulgation was in percentage: 10%, 25%, 50%, 75% and 90%. Results: Considering the 50% incidence (median) , the BSI incidence decreased from 4.52 to 3.81 in adult intensive care unit, 5.08 to 4.7 in PICU and 10.9 to 4.88 in NICU. Conclusion: There was an association with the incidence reduction of BSI and the surveillance practices, regarding infection control at the private and public hospitals at the city of Sao Paulo

[206]
Varicella outbreak in a university hospital of the state of Ceará

JORGE LUÍS NOBRE RODRIGUES; LUCIANA CARVALHÊDO FRAGOSO; EVELINE SANTANA GIRÃO; GERMANA PERDIGÃO AMARAL; MARIA IZABEL ELOY OLIVEIRA SENA; GEOVANIA MACIEL DE SOUSA; MÔNICA CARDOSO FAÇANHA; LÍCIA BORGES PONTES

HOSPITAL UNIVERSITÁRIO WALTER CANTÍDIO

Introduction/Objective: To describe varicella outbreak in a university hospital in Ceará. Method: Revision of cases of chickenpox transmitted after in-hospital contact with index case. Results: From December 2016 to March 2017, there was an outbreak of varicella in a university hospital in the state of Ceará, with a patient with liver transplantation as the index case. Twelve other cases were reported after the source patient, including eight transplant patients and other medical wards, three transplant patient relative and a health care cleaner employee. The hospitalizations were blocked in some wards, the immunocompetent susceptible were vaccinated and immunoglobulin was administered to the immunosuppressed ones independent of the information of varicella in the past or prior vaccination, because some patients who became ill were said to be immunized in the past The contact between the cases was identified in 9 of them in the hospitalization areas. However in 03 of them, no temporal contact was observed, in the wards. Probably they had contact with the source in the image unit. Conclusion: In-hospital transmission control in immunodeficient wards is hampered by the lack of response to the virus, the lack of control over caregivers and the lack of immunization of professionals working in the hospital.

[208]

Prevalent pathogens in ventilator-associated pneumonia in an intensive care unit: five years survey

TAISE COSTA RIBEIRO KLEIN; JULIANA LOES TORRES; PATRÍCIA DE ALMEIDA VANNY; FERNANDA LUNARDI

UNIVERSITY HOSPITAL – UNIVERSIDADE FEDERAL DE SANTA CATARINA (UFSC), SATE OF SANTA CATARINA, BRAZIL.

Introduction: The mechanical ventilation (MV) is widely used in critical care. Ventilator-associated pneumonia (VAP) is a serious infection that increases time of hospitalization and mortality, impacting on hospital costs. Tracheal secretion culture is an ally in the appropriate therapeutic indication, since it can show the probable etiological agents and antimicrobial susceptibility. Objective: To identify the prevalence of PAV- associated pathogens in a general adult Intensive Care Unit (ICU) of a south Brazilian hospital in the last 5 years. Methodology: Retrospective research of HAIs data from the ICU, from 2012 to 2016, which are included in the Epidemiological Bulletins of an HAIs control service of a hospital in south Brazil. It is a general adult ICU of a university hospital with 10 to 14 beds. Exposure and incidence densities and percentage were calculated. Patients who stayed in the ICU less than 24 h were excluded. Results: There were 21531 patients/day, 11837 MV-patients/day and 3603 exposed individuals. 315 PAVs were diagnosed (incidence density 26.61). 314 pathogens were isolated: 28.66% Acinetobacter spp=28.66%, P. aeruginosa=23%, K. pneumoniae=13.37%, others around 2% (Serratia spp, Enterococcus spp, Haemophilus spp, B. Cepacia, P mirabilis, Aspergilus spp, Salmonella sp, other gram-negative bacteria). 6.68% of isolated pathogens were betalactamase-producing organisms and 5.73% were carbapenemase producers. Conclusion: Acinetobacter spp, Pseudomonas spp and Klebsiella spp were the most frequent isolated pathogens in tracheal secretion cultures of VAP-diagnosed patients. The growing antibiotic resistance among gram-negative pathogens like these is a concern and effective methods of environmental care, material processing and hand sanitization need to be established for the reduction of VAP.

[209]
Evaluation of *Acinetobacter baumannii* isolations of blood currents infection over ten years in a university hospital

JORGE LUÍS NOBRE RODRIGUES; MICHELLE RODRIGUES PINHEIRO; LUCIANA CARVALHÊDO FRAGOSO; EVELINE SANTANA GIRÃO; GERMANA PERDIGÃO AMARAL; MARIA IZABEL ELOY OLIVEIRA SENA; GEOVANIA MACIEL DE SOUSA; MÔNICA CARDOSO FAÇANHA; LÍCIA BORGES PONTES

HOSPITAL UNIVERSITÁRIO WALTER CANTÍDIO, STATE OF CEARÁ, BRAZIL.

Introduction/Objective: To evaluate the isolation of *Acinetobacter baumannii*, related to bloodstream infection in a university hospital. Method: Descriptive analysis of the results of the sensitive and carbapenem - resistant Acinetobacter baumannii isolated in blood cultures comparing ICU, (and wards) related to bloodstream infection with microbiological evidence from 2007 to 2016 in a university hospital in the state of Ceará. Results: 93 A. baumannii were isolated from 2007 to 2016, 21 (22.6%) sensitive and 72 (77.4%) resistant to carbapenems. Between 2010 and 2014, 73 (78.5%) A. baumannii were identified, which corresponds to more than three quarters of the total cases reported. During this period, resistance profile was stable: 13/73 (17.8%) of susceptible and 60/73 (82.2%) of resistant microorganisms. 42 (45.5%) were isolated from the wards, 35 (83%) resistant to carbapenems and seven (16.7%) sensitive. In the ICU, 51 (54.8%) were isolated, 37 (72.5%) resistant and 14 (27.5%) sensitive to carbapenems. There was no statistically significant difference between the proportion of resistance to carbapenemics between bacteria isolated in the ward and in the ICU (p> 0.3).Conclusion: Carbapenem resistant A. baumannii predominated in the period, with isolation and resistance concentration between 2010 and 2014, and a tendency to decrease in 2016 in the ICU.

[210]
Hand hygiene in the training of nurses: knowledge, ability and attitude

JEENNA LOUHANNA UMBELINA SPAGNOLI[1]; STEFHANIE CONCEIÇÃO DE JESUS[1]; ADENÍCIA CUSTÓDIA SILVA E SOUZA[2]; ZILAH CÂNDICA PEREIRA DAS NEVES[2]; ANACLARA FERREIRA VEIGA TIPPLE[1]

1.FEDERAL UNIVERSITY OF GOIAS; 2. PONTIFICALCATHOLIC UNIVERSITY OF GOIAS, BRAZIL.

Introduction: Adhesion to hand hygiene (HH) is low, and the graduation period is a propitious moment to acquire competences. Aim: To evaluate the competence regarding HH among nursing undergraduate students. Methods: Cross-sectional study conducted between May and November 2015, with six higher education institutions (HEIs) and eight healthcare services in the central region of Brazil. After ethical approval, data collection was performed in three stages by applying evaluated and tested questionnaires and checklist, with the third stage performed exclusively in the HEIs with maximum score in the course preliminary concept (CPC) evaluation. In the first stage, a questionnaire was applied in the classroom, followed by individual observation of the HH technique performance (second stage). The third one was performed at the healthcare services, in order to observe the adherence to HH. Results: Of the 179 undergraduate students, most were between 21 to 30 years old and female. In most HEIs, the knowledge score was regular (27.0% to 48%), except for HEI 6, with maximum score in the CPC, which obtained better indexes. Most of the HEIs, the range related to the right HH moments was from 29.3% to 53.7%, except for HEI 6 (74.9%). Only at IES 6, rubbing for most of the HH technique steps was performed (> 85%). Observed adherence to HH in HEI 6 was 33.7%, and compliance with most recommended steps (80%). The highest adhesion rates were: after contact with patient and after risk of contact with fluids. Conclusions: There was a deficit of knowledge and skill regarding HH, except for the HEI (6) with the highest score in the CPC evaluation. However, concerning the attitude to HH according to the World Health Organization recommendations, the adhesion rate was very low in HEI 6. The discrepancy between the percentage of knowledge/ability and attitude to HH in this HEI (6), reveals that the challenge to improve adhesion to HH extrapolates theoretical-practical training.

[211]
Where should we watch for resistance? Spatial and cluster analysis of Brazilian hospital networks

HELENA MACIEL GUERRA[1]; THOMAS NOGUEIRA VILCHES[2]; MARIANA FÁVERO BONESSO[1]; CLÁUDIA PIO FERREIRA[2]; CARLOS MAGNO CASTELO BRANCO FORTALEZA[1]

1.BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO;
2.BOTUCATU INSTITUTE FOR BIOSCIENCES, BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: New phenotypes of antimicrobial resistance spread worldwide. National-level surveillance of multidrug-resistant organisms (MDROs) should focus on hospitals that are more susceptible to introduction and spread of resistance phenotypes. Our study aimed at identifying those hospitals. METHODS: A database containing all 6,226 hospitals in Brazil was obtained from the National Registry of Healthcare Settings (cnes.datasus.gov.br). Hospitals and beds were geo-referenced using Kernel estimates in ArcGIS 10 (ESRI, Redlands, CA, USA). A cluster analysis based on three hospital characteristics (total beds, beds intensive care units and in high risk nurseries), demographic and geographical data (borders with other countries, existence of international airport, tourism classification) was performed using R 3.4 software (R Foundation for Statistical Computing, Vienna, Austria). Briefly, we applied the Gower method for quantitative and qualitative distances, using specific R functions (daisy, hclust and cutreeDynamic) to distribute individual hospitals in clusters. RESULTS: Kernel maps pointed out to concentration of hospitals in Southeast, South and Northeast regions, while hospital beds tended to group around State capitals. The cluster analysis identified 18 clusters (grouping from 93 to 842 hospitals) and 77 non-clustered hospitals. A total of 103 hospitals (93 in cluster #18 and 10 non-clustered hospitals with more than 500 beds) were identified as priority for surveillance of MDROs. They were distributed in Regions as follows: North, 2; Midwest, 8; South, 13; Northeast, 26 and Southeast, 54. CONCLUSIONS: Our study pointed out to hospitals that may be points of entry for new phenotypes of MDROs and paths for dissemination of those pathogens in Brazil. In spite of the scarcity of microbiological data available to validate our findings, we recommend that such hospitals are eligible for a network of sentinel surveillance for antimicrobial resistance.

[212]
Experience report: implantation of bundle for prevention of primary bloodstream infection

ANDRESSA GARCIA NICOLE[1]; TAMARA RIBEIRO GONÇALVES[1]; JULIANE ROCHA DE OLIVEIRA[1]; DÉBORA OLIVEIRA PRATES[2]; ALEXANDRE SOUZA MORAIS[1]; VALQUÍRIA CAMIN BORTOLI[1]; ANDRÉIA SOPRANI SANTOS[1]; SABRINA CAMISÃO RIBEIRO[3]; PAULA SOUZA SILVA FREITAS[1]; BRUNO HENRIQUE FIORIN[1]; JEFFERSON PESSOA HEMERLLY[1]; ANA ALICE DIAS DE CASTRO LUZ[1]

1.FEDERAL UNIVERSITY OF ESPÍRITO SANTO; 2. ROBERTO A. SILVARES STATE HOSPITAL; 3. CELSO PIERRO HOSPITAL AND MATERNITY, BRAZIL.

Introduction: Primary bloodstream infections (BSIs) have a central venous catheter (CVC) as the main risk factor, with an estimated incidence of 7 infections per 1000 catheter days and association with increased mortality rates, length of hospital stay and Costs of care. The education of health professionals and work organization, however, are capable of promoting improvements in this scenario. Objective: To report the experience of the multi-professional team in the adjustment of CVC management. Interventions: The experience was performed in a public hospital in of Espírito Santo. The process occurred between January and May/2016 with HICC members, representatives of general and vascular surgeons, nursing team, and members of the extension project "Quality, service evaluation and patient safety in health care". Steps: A) Analysis of primary studies and reviews, subsidizing the composition of a bundle for prevention BSIs. B) Comparison of practices performed with the bundle, involving other members of the care team, observing weaknesses. C) Elaboration of work instruction (WI) containing bundle measures and the following local adjustments: definition of environments for the procedure, use of specific kits, and CVC insertion checklist, as an empowerment for intervention. All the professionals involved in the actions were trained before implantation and after in the following months. Results: The implementation stages allowed the involvement of the care team, making them co-responsible and motivated to change the process. There were reductions in CVC-associated CVC rates from 13 infections/1000 catheter-days in May/2016 to 1 infection/1000 catheter days in the months between September/2016 and January/2017. Conclusions: The implementation of the bundle with the effective participation of the multi-professional team allowed a greater effectiveness in the change in the work process prevention and control of BSIs, leading to a better result.

[214]
Staphylococcus sp. coagulase-negative: infection or colonization? How to reduce this doubt?

GABRIELA BRANCO SONEGO[1]; DIOGO CESÁRIO DE SANTOS[2]; LILIAN DEL ALAMO[1]; MÁRIO CÉSAR NORONHA[2]; TATIANA MACEDO[1]; LUCY NAGM[1]; LOURDES DAS NEVES MIRANDA[1]

GENERAL HOSPITAL OF ITAPECERICA DA SERRA; CEAC SUL; SÃO PAULO STATE, BRAZIL.

Introduction: Isolation of Staphylococcus sp. Coagulase-negative (SCN) in blood cultures (HMCs) are a challenge as they are important pathogens as contaminants. Another problem is the sensitivity profile of SCNs, which are highly resistant to methicillin, requiring the use of glycopeptides for their treatment, increasing the consumption of this class of antimicrobials. Objective: To demonstrate that basic actions of laboratory improvements can reduce the risk of contamination of HMCs. Interventions: In 2015, the laboratory along with hospital infection control and nursing leadership established some actions: creation of an HMC contamination indicator; the identification of all collectors for reorientation directed at those with the highest contamination rate; recording of HMC positivity time; and continuous training of collectors; The medical infectologist of hospital infection control service considering the patient's clinic, analyzed the isolation of SCN after 24 hours in a single sample of HMC as a contaminant, as well as the growth of SCN in two blood samples with more than 24 hours of incubation. Results: In 2016, we observed a significant reduction in the number of hospital bloodstream infections by SCN (24% versus 48%), not accompanied by a reduction in the number of infections by other pathogens not considered as contaminants. We found a decrease in the contamination rate from 7.2% to 6.87%. Conclusions: In spite of the discrete reduction in contamination rates, recording the growth positivity time of HMCs contributed to reduce diagnostic doubt and unnecessary treatments of pseudo infections by SCN, demonstrating that the adoption of simple and low-cost measures such as continuing education and monitoring of quality indicators can significantly impact our patient care.

[215]
Mortality in sepsis patients with positive blood culture versus patients with negative blood culture

EDUARDO ALMEIDA CASTRO; JOSE AUGUSTO PEREIRA; JULIO DELGADO CORREAL; SILVIA THEES CASTRO

HOSPITAL UNIVERSITARIO PEDRO ERNESTO, RIO DE JANEIRO, BRAZIL.

Background Sepsis is a clinical dysfunction that leads to hemodynamic changes and high mortality. The isolation of microorganisms responsible for sepsis is frequently not achieved (20 to 50% of cases with nowadays technology) due to low sensitivity of blood culture (BC). Even when the causative pathogen is isolated, the identification may take at least 48 hours, hence initial therapy is given empirically, what tends to reduce mortality rate. Objective This study aims to identify differences in mortality rates between Sepsis patients with positive and negative BC. Methods This prospective study was conducted in a University Hospital in Rio de Janeiro from March to September 2016. The patients selected for this research were all diagnosed with sepsis, hospitalized for more than 48 hours, who collected BC and started antibiotic. Bactec™ Plus Aerobic and the Vitek® 2 automated systems were used. Results Seventy-eight sepsis patients were included in this study, from which 47 presented positive BC (60.3%) and 31 presented negative BC (39.7%). In patients with identified microorganisms, a total of 16 deaths (34%) occurred within 30 days of diagnosis, while in patients with negative BC there was 13 deaths (41.9%). (p=>0.05). In patients with positive BC, 7 (43.7%) of the deaths occurred in the first two days of sepsis diagnosis, while in patients with negative BC, 5 (38.5%) of the deaths occurred in the same period. No distinctions were found between mortality rates associated to multidrug-resistant pathogens isolated in BC (7 deaths) in comparison to cases of sepsis with multisensitive pathogens (6 deaths). Conclusion No distinctions were found in mortality rates between patients with negative and positive BC. However, BC collection is recommended, considering that microorganism identification helps to direct the treatment, reducing the selective pressure, the costs and side effects. The isolation allows the therapy to be guided with local sensitivity standards.

[216]
Impact of an antimicrobial stewardship program in *C. difficile* incidence

MIRIAN DE FREITAS DALBEN; MARIA BEATRIZ GANDRA SOUZA DIAS; FERNANDA DESCIO BOZOLA; MAURA SALAROLI OLIVEIRA

HOSPITAL SIRIO LIBANES, SÃO PAULO, BRAZIL.

Introduction: Antimicrobial stewardship is always a challenge for hospital epidemiologists. In private hospitals, the need to preserve the prescriber's autonomy makes the rational use of antimicrobials even more difficult, since strategies based on the control of antimicrobial prescription are not recommended but strategies to reduce antimicrobial consumption are essential to decrease the incidence of multirresistant pathogens and C. difficile infections. Objective: To implement an antimicrobial stewardship program in a private hospital aiming at reducing antimicrobial consumption and C difficile incidence. Methodology: It was conducted in a private tertiary hospital, with 600 beds.. In March 2015, an antimicrobial control program was implemented, which consisted of the following interventions: 1) Introduction of an automatic alert in the electronic prescription system, asking the prescribing physician about the need for maintenance; 2) Evaluation of antimicrobials prescribed for more than 14 days with interventions directed at the prescriber. Suspension of the antimicrobial was suggested whenever it s maintenance was considered unnecessary. The decision was left to the prescriber's discretion. 3) Evaluation of the prescription of patients with positive blood cultures. The outcomes evaluated were the consumption of antibiotics in DDD/patient-day and the number of C difficile infections/10000 patient-days in 2014, 2015 and 2016. Results: There was no significant reduction in the consumption of antibiotics in DDD/patient-days in the years post antimicrobial stewardship program establishment. We observed a significant reduction in the incidence of Clostridium difficile cases: 9.9 in 2014, 8.8 in 2015 and 6.4 in 2016. Conclusion: The introduction of an antimicrobial stewardship program focused on educative interventions was related to a decrease in the incidence of Clostridium difficile, but an effect in the reduction of antibiotic consumption was not observed.

[217]
"Quero-bis" project: an educational strategy for the prevention of health care-associated infections

ANA CAROLINA PUIN DA SILVA; CAMILA DA SILVA BICALHO; DANIELA MARIA BISPO; MARIA EMILIA BATISTA SOUZA; MARIANA RODRIGUES SANTIAGO; RAQUEL CARNEIRO HIGA; MICHELY FERNANDES VIEIRA; LIGIA CAMERA PIERROTTI; EDSON ABDALA

INSTITUTO DO CÂNCER DO ESTADO DE SÃO PAULO (ICESP), SÃO PAULO, BRAZIL.

Introduction: Health care-associated infections (HCAI) are a global challenge. The risk for ICU patients is increased due to the use of invasive devices (ID). In cancer patients, these factors are associated with immunosuppression intrinsic of the disease and the immunosuppression secondary to chemotherapy and radiation, that being an important cause of morbidity and mortality. One strategy used for HCAI prevention and identification of risk groups is the implementation of process surveillance, resulting in educational actions. Objective: The objective of this study was to evaluate the implementation of a process evaluation project in maintenance care of ID, as an educational strategy. Intervention: A prospective procedural surveillance of maintenance care of ID was performed in patients admitted to the ICU at a cancer hospital from July to September/16. Data were collected in the SCIH surveillance routine and inserted into a shared spreadsheet for analysis. The compliance criteria were evaluated for patients in mechanical ventilation (VM), short-term central vascular catheter (CVC) and urinary catheter (UC). At the end of the survey, health care workers who were in compliance with all criteria received immediate gratification, reinforcing positive feedback continuing education. Results: During the study period, 156 patients were evaluated, making a total of 249 devices. Of those, 30 (12.1%) referred to patients under VM, 144 (57.8%) to patients using CVC and 75 (30.1%) to patients using UC. Stratifying the analysis, in July 12% showed compliance in all criteria, with improvement of 20% in August and 32% in September. Health care workers with all ID in compliance received the proposed bonus. Conclusion: Therefore, prospective surveillance revealed deficits in the maintenance care of IDPs. During the course of the study, however, the gratification project of the collaborators showed an improvement in the care provided to patients using ID.

[218]
The influence of weather in surgical site infections: a study in a tropical area

FERNANDA SAAD RODRIGUES[1]; MARINA DE OLIVEIRA DA SILVA[1]; MATHEUS RAGAZZO LEME[1]; ANTONIO RIBEIRO DA CUNHA[2]; CARLOS MAGNO CASTELO BRANCO FORTALEZA[1]

BOTUCATU SCHOOL OF MEDICINE, STATE UNIVERSITY OF SÃO PAULO (UNESP); SCHOOL OF AGRONOMICAL SCIENCES. BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: Recent studies have pointed out to seasonality of Healthcare-Associated Infections (HCAIs). We conducted a mixed ecological/individually based study aiming at identifying the impact of temperature and humidity on the risk for surgical site infections (SSIs) in a teaching hospital in inner São Paulo State, Brazil. METHODS: A total of 29,351 surgeries performed from 2011 through 2015 in the teaching hospital from Botucatu School of Medicine (450 beds) were analysed. Data for average daily temperature (T) and relative humidity (RH) and aggregate rainfall (RF) were obtained in the meteorological station from the School of Agronomical Sciences in the same city. Logistic regression was performed to identify the impact of T, RH and RF in the day of performance of surgery on individual risks for SSIs. Models were adjusted for year of surgery, demographic data, time of preoperative stay and wound classification. Analysis was performed in SPSS 20 (IBM, Armonk, NY, USA). RESULTS: The overall SSI rate was 8.9%, and declined over the years. In adjusted models we found association of T (OR=1.02; 95%CI=1.002-1.03; P=0.03) and RH (OR=1.04; 95%CI=1.001-1.08; P=0.03) with increased risk for overall SSI. The impact of T was greater in clean procedures (OR=1.03; 95%CI=1.03-1.05; P=0.03), while RH impacted on clean-contaminated surgeries (OR=1.05; 95%CI=1.01-1.10; P=0.04). Age, preoperative stay and wound classification were also independently associated with the risk of SSI (P<0.05). CONCLUSION: We identified a small but consistent impact of meteorological conditions on the individual risk of acquiring SSI. Our findings reinforce the importance of controlling the climate in operating rooms for infection prevention and control.

[219]
Time for initiation of antibiotic therapy in early onset neonatal sepsis: are we doing it right?

LIVIO AUGUSTO ANDRADE VILELA DIAS; MARIANA CREMA TOBARA; CAMILA DE ALMEIDA SILVA; GISELY CRISTINA PEREIRA VETUCHE; CHAYENNE MIKA MATSUMOTO PINTO TONHEIRO; MICHELE DA SILVA NASCIMENTO; PATRICIA DE SOUSA SCATIGNO; ROSANA RICHTMANN

MATERNIDADE PRO MATRE PAULISTA, SÃO PAULO, BRAZIL

Introduction :Culture-proven early onset neonatal sepsis (EOS) is an important event, known to affect 0.77 per 1,000 live births in the USA. EOS related mortality and long term morbidities remain as important concerns. Little is known about the timing for initiation of empirical antibiotics in neonates. This study highlights the discussion about this issue that may be overlooked on newborns management, resulting in delays on adequate treatment. Methods: It was performed at a private maternity hospital, settled in São Paulo/Brazil, with 200 beds, including a neonatal intensive care unit (NICU) with 70 beds. It was retrospectively conducted, reviewing the records of EOS patients admitted at the NICU from January 2015 to March 2017. Institutional empirical antibiotic therapy for EOS is gentamicin and ampicillin. Results: Twenty two episodes of EOS were detected, with a rate of 0.77 EOS per 1,000 live births; in 5 episodes a positive blood culture was recovered. Antibiotic therapy was initiated as early as 13 minutes from birth and as late as 21:08 h. The median time for the first antibiotic doses was 02:10 h in 2015, 02:39 h in 2016 and 2:19 h in 2017. Considering as reasonable time for the initiation of the antibiotic within 2 hours from birth, in only 50% of cases this aim was achieved. The mortality rate in all patients was 22% with 3 cases on early antibiotic group (<2h) and 2 on delayed antibiotic group (≥2h). Discussion: Antibiotic starting time has been proof to decisively change outcomes on sepsis in adults and other pediatric population and this is an attempt to bring to discussion the neglected importance of antibiotic initiation in the management of newborns. Other strategies have been successfully implemented in the first hours of life and early antibiotics should be included in the standard of care of risk babies. It's mandatory to obtain data about the effect of delayed antibiotic on EOS, and this knowledge will improve timely antibiotic administration.

[220]
Meningitis nosocomial in a hospital specialized in neurosurgery

SILVIA THEES CASTRO[1]; EDUARDO ALMEIDA CASTRO[2]; JOSE AUGUSTO PEREIRA[2]; JULIO DELGADO CORREAL[2]

1.INSTITUTO ESTADUAL DO CEREBRO PAULO NIEMEYER; 2. HOSPITAL UNIVERSITARIO PEDRO ERNESTO, RIO DE JANEIRO, BRAZIL.

Background Post-neurosurgical meningitis (PNM) is a rare complication that is accompanied by an increase of hospital stay and high mortality. The aim of this observational, prospective cohort study was to describe the time for the development of PNM, length of hospital stay, mortality, and the microbiological profile. Material/methods This study was conducted in a public hospital in Rio de Janeiro, specialized in neurosurgery, containing 37 beds for adults of neurosurgical intensive care unit. The study period was from October 2013 to October 2016. Results 42 PNM cases were described in 2925 neurosurgical procedures performed. Among the patients who developed meningitis, 25 (59.5%) underwent surgery for treatment of intracranial tumor, 11 (26.2%) required surgery due to subarachnoid hemorrhage and 6 (14.3%) surgeries went to other causes (hydrocephalus and epilepsy treatment). The median time for development of PNM was 11 days. The median length of stay in patients with PNM was 16 days. The median length of stay for patients who had pathogens identified in the CSF was 27 days, while for patients who had no pathogens identified was 14 days (p =0.0160). Overall mortality rate was 23.8% (10/42). One patient died within the first 10 days after diagnosis, the other deaths occurred between 11 and 48 days. There were pathogens identified in 23 patients (two patients had two pathogens isolated), most frequent pathogens were Gram-negative (n=22, 88%) while Gram-positive were 3 (12%). The most frequent causative pathogens in PNM were K. pneumoniae (n=8, 32%), Acinetobacter spp. (n=4, 16%) and P. aeruginosa (n=3, 12%). No pathogens were identified in 19 patients. Conclusions There is scarce PNM data in the literature. In our study, PNM were rare, predominantly caused by Gram-negative. The mortality rate was similar to that found in the literature. Interestingly, we found a median time of discharge almost twice between the groups with identified bacteria associated to PNM.

[221]
Surveillance of bloodstream infection related to parenteral nutrition in cancer patients.

DANIELA MARIA BISPO; CAMILA DA SILVA BICALHO; GISLAINE APARECIDA OZORIO; DEBORA PEREIRA DOS SANTOS; PATRICIA CAMARGO MARQUES; MARIA EMILIA BATISTA DE SOUZA; MARIANA RODRIGUES SANTIAGO; RAQUEL CARNEIRO HIGA; ANA CAROLINA PUIN DA SILVA; MICHELY FERNANDES VIEIRA; MARISTELA PINHEIRO FREIRE; LIGIA CAMERA PIERROTTI; EDSON ABDALA

INSTITUTO DO CÂNCER DO ESTADO DE SÃO PAULO (ICESP), BRAZIL.

The use of parenteral nutrition (PN) in cancer patients is necessary to re-establish the caloric intake of critical patients with metabolic absorption syndromes in response to treatment. Catheter-related bloodstream infections (CLABSI) represents an important complication with risk to patient survival. In the genesis of BSI in oncological patients, in addition to the exogenous factors related to CVC care, technique and place of insertion of the device and length of stay, endogenous conditions such as immunosuppression are present. To describe BSI surveillance in cancer patients using PN with CVC and BSI-PN.Since January 2016, the Infection Control Service (ICS),together with the hospital nutrition team (HNT),established surveillance protocol directed to the CVCs used for PN with a specific indicator for monitoring the BSI density. Patients using PN are monitored by the HNT and the data was shared in a worksheet with the ICS.The Data assessed were: time of use of PN, hospital sector where the diet was started and PN/day. ICS is responsible for completing the data referring to the patients who presented with BSI, date of insertion of the CVC and pathological agent isolated in culture. In this study, the criteria for BSI diagnosis was accordingly to the CDC 2015 surveillance definitions. In 2016, 3478 PN-days were evaluated, with 22 BSI-PN, with a density of 6.3 BSI-NP per 1000 CVC-day. In the ICUs, the BSI-PN density was 6.4 BSI-NP per 1000 CVC-day and in the clinical and surgical wards together it was 5.8 BSI-NP per 1000 CVC-day. The distribution of the microorganisms showed that 34.3% of the BSI were by GNBs, 34.4% by GPC and 31.3% by fungi. In isolation, the most prevalent microorganisms were Candida non albicans. The mean time of use of CVC after the installation of NP, among all patients, was 6 days; between patients with ICS-NP, the mean was 12 days. The processes associated with ICS-NP should be monitored to structure actions of improvements in cancer patient care.

[222]
Klebsiella spp: the frequent aetiological agent from nosocomial bloodstream infections in SP

MILTON SOIBELMANN LAPCHIK - PROF. DR.; VALQUIRIA OLIVEIRA BRITO; MARIA GOMES VALENTE; INGRID WEBER NEUBAUER; MARIA ANGELA KFOURI; MARIA DO CARMO SOUZA; FERNANDA ZENAIDE

COORDENAÇÃO DE VIGILÂNCIA EM SAÚDE (COVISA), SÃO PAULO, BRAZIL.

Introduction: The nosocomial infection control committee coordination, at the city of Sao Paulo, has monitored the bloodstream infection's aetiological agents, from the adult intensive care units, pediatric intensive care units (PICU) and the newborn intensive care units (NICU) including over 90% of the totality of hospitals localized in the city. The bacteriological surveillance is relevant for the nosocomial infection control and the rational use of antibiotics in hospitals. Objectives: The study was conducted to identify the prevalence of the most frequents agents identified at the intensive care units (adults, pediatrics and newborn patients), from 2012 to 2016, regarding the nosocomial bloodstream infections (BSI). Methods: The BSI definitions were related with NHSN project. The information of the BSI aetiological agents, observed at the blood culture analysis, was sent from each hospital's nosocomial infection control committee to the city hall nosocomial infection control coordination. Results: Klebsiella spp was the most frequent agent identified in the blood cultures for adults and pediatrics patients. The same agent was the second most frequent observed in blood cultures from the newborn patients (2.021 positive samples for adults, 353 positive samples for pediatrics and 580 positive samples for newborn patients). The results from the antibiotic resistance revealed high resistance to carbapenems in the adults samples, when compared with the samples from pediatrics and the newborn patients. Conclusion: Klebsiella spp is the aetiological agent with high prevalence regarding the BSI in adults, pediatrics and the newborn patients at the critical care units in Sao Paulo. This information is relevant considering the guidelines for the rational use of antibiotics and the infection prevention control in the city

[225]
Direct observation of a maintenance bundle of central venous in the prevention of CRBSI

THAÍS FABER FABER FABER; NÁDIA MORA KUPLICH; RODRIGO PIRES DOS SANTOS

HOSPITAL OF CLÍNICAS OF PORTO ALEGRE, STATE OF RIO GRANDE DO SUL, BRAZIL.

Introduction: Central venous catheters (CVCs) are essential in the treatment of patients with severe and chronic diseases, however, their use is associated with the risk of primary infection of the bloodstream, which is even greater in immunosuppressed patients. Bundles have been used as a strategy to prevent these infections, but few studies have used packages of preventive measures aimed at maintaining the CVC. Objective: The main objective of this study was to compare catheter-related bloodstream infections rates before and after the application of a CVC maintenance bundle. It was performed direct observation adherence in hospitalization units of adult and pediatric patients with oncological and hematological diseases of the Hospital of Clínicas of Porto Alegre (HCPA). The adherence of the nursing team to the bundle was verified, along with the stratification of infections by epidemiological diagnosis, days of CVC use and occurrence of infection. Methods: This was a quasi-experiment with a quantitative approach, carried out from January 2015 to September 2016. The intervention consisted of a maintenance bundle of CVC and education actions, with evaluation of the rates before and after their Implementation. Results: In the pre-intervention period, the rate of catheter-related bloodstream infections was 5,3 ‰ CVC-day (N = 70) and in the post-intervention period 4,3 ‰ (N = 39). The oncopediatric unit presented lower post intervention rates than the protected environment unit (PEU), from 7,2 ‰ CVC-day to 4,4 ‰, but there was no statistical significance. However, the PEU showed higher adhesion to the bundle (72,6%). Conclusion: The use of a CVC maintenance bundle alone did not demonstrate reduction of the catheter-related bloodstream infections rates.

[226]
A campaign to reduce catheter-related bloodstream infections in intensive care unit

LAURO VIEIRA PERDIGÃO NETO[1]; ANA PAULA MATOS PORTO[1]; SANDRA NASCIMENTO DOS ANJOS[1]; ELOISA MARA BAPTISTA GAGLIARDI[1]; DAÍLA SOUSA LIMA[1]; CLÁUDIA FABÍOLA PALTRINIERI GARCIA[1]; MARIANA BARBOSA MONTEIRO[1]; PATRÍCIA DAS GRAÇAS FERREIRA[1]; ROGERIO ZIGAIB[1]; DANIEL MOREIRA LIMA[1]; DANILO NORITOMI TEIXEIRA[1]; SYLAS BEZERRA CAPPI[1]; SILVIA FIGUEIREDO COSTA[2]; MAURA SALAROLI DE OLIVEIRA[1]

1.HOSPITAL PAULISTANO; 2. FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, BRAZIL.

Introduction/Objectives. Catheter-related bloodstream infection (CL-BSI) is one of the most lethal and costly complications of central venous catheterization. The incidence of CL-BSI had been rising in the Intensive Care Unit (ICU) of Hospital Paulistano in the last five years. The aim of this study was to demonstrate the success of the actions adopted by the intensive therapy, hospital infection control and quality of patient care teams in the prevention of CL-BSI in intensive care unit. Interventions. From June to October of 2015, the actions were: hand hygiene campaign (5 Moments for Hand Hygiene, correct hand rubbing and use of GloGerm with black light box test, swab cultures from hands and a panel with culture photos); catheters and connectors evaluations (multidisciplinary daily round to assess the dressing of central venous catheters – if inadequate dressings were detected, nurse on duty was warned and dressing changed); surface of the support car intended only for medication preparation, with available disinfectant for the cleaning next to that area; use of standardized dressing kits. Results. 416 healthcare workers (HCW) were trained about the importance of hygiene hands at the hospital. Culture of the hands was done in 17 HCW. 353 evaluations were carried out in the intensive care unit, in 168 catheters; in 102 evaluations (29%) some irregularities were detected: the most frequent was the presence of dirt on dressing (n = 42; 41%), followed by humidity (n = 35; 34%) and connector undated (n = 30; 29%). After the beginning of the campaign, the rates decreased robustly and sustainably during the following year, without infections in most of the following months. Conclusions. The conclusion of this work is that bloodstream infection rates and the importance given to the problem by HCW suffer major impact with the set of measures applied by a multidisciplinary team and settled on a structure based on education, repetition and training.

[227]

Use of Ishikawa diagram for investigation of infections in breast implant surgeries after mastectomy

BIANCA AGRA BARBOSA; VALÉRIA PAES LIMA FERNANDES; ISABELA RODRIGUES

UNIVERSITY HOSPITAL OF BRASÍLIA, BRAZIL.

Surgical site infection (SSI) is the most common preventable healthcare - associated infection, and is the third most frequent infection in the world among patients undergoing surgeries. In Brazil, SSI comprises 14 to 16% of the infections in hospitalized patients , which are usually caused by pathogens of the endogenous microbiota. Infection rates are higher after implant-based breast-reconstruction surgery than after aesthetic breast augmentation, as well as in patients who received radiation therapy. The aim of this study is investigate the factors contributing to the occurrence of SSI in patients with breast implant insertion after mastectomy, performed at the university hospital of Brasília. The investigation began with a notification by a doctor of patients who underwent breast implant insertion in October, and who presented with infectious symptomatology. All patients had breast cancer and underwent mastectomy in a previous procedure. In a retrospective investigation on the medical records, looking for the classic risk factors for infection according to the current guidelines, it was not possible identify any flaws in the prevention protocol that justified the outbreak. However, using the Ishikawa diagram, contributing factors were identified during the health assistance and become opportunities for improvement, such as: do not have a previous certification of quality of donated material, as in the case of prosthetics, planning surgeries without antecedence, no control of the sterilization process by the chemical integrators, air conditioning problems , structure of the operating room. As an outcome indicator, an SSI incidence rate of 16.6% was evidenced during the year and in October, month with the highest number of cases, the rate was 25%. The Ishikawa diagram contributes to the investigation of hospital outbreaks and healthcare - associated infections, to favor a systemic view of work processes.

[228]
Molecular epidemiology of nosocomial bacteremia caused by imipenem-resistant *Acinetobacter baumannii*

MÔNICA DA SILVEIRA[1]; CARLOS HENRIQUE CAMARGO[2]; FRANCIELLI MAHNIC DE VASCONCELLOS[2]; LUCAS PORANGABA SILVA[3]; ADRIANA APARECIDA FELTRIN CORREA[1]; MILENA APARECIDA DEL MASSO PEREIRA[1]; CARLOS MAGNO CASTELO BRANCO FORTALEZA[1]

1.BOTUCATU MEDICAL SCHOOL, STATE UNIVERSITY OF SÃO PAULO (UNESP); 2. BACTERIOLOGY DIVISION, ADOLFO LUTZ INSTITUTE; 3. INSTITUTE OF BIOSCIENCES. CITY OF BOTUCATU, SÃO PAULO STATE, BRAZIL.

INTRODUCTION/OBJECTIVES: *Acinetobacter baumannii* is hyperendemic in Brazilian hospitals, where resistance do Carbapenems is often greater than 90%. We conducted a study aimed at identifying risk factors and outcomes of nosocomial bacteremia caused by imipenem-resistant *A. baumannii* (IRAB). METHODS: A case-control study was performed in a consortium of three public hospitals in Bauru, inner São Paulo State, Brazil, in 2013-2016. We included 38 patients with IRAB bacteremia and 76 controls from the same units where cases were identified. Demographic data, comorbidities, invasive procedures and devices, use of antimicrobials and admissions to other hospitals were collected in chart reviews. Logistic regression analysis was performed in SPSS 20 (IBM, Armonk, NY, USA). Isolates from case patients were typed with Pulsed-Field Gel Electrophoresis (PFGE). RESULTS: Subjects with IRAB bacteremia were more likely to have used a greater number of antimicrobial agents (OR=2.53; 95%CI=1.64-3.89; P<0.001), to have been admitted to a greater number of different hospitals in the past year (OR=2.42; 95%CI=1.08-5.39; P=0.03) and to have a central venous catheter in place (OR=4.39; 95%CI=1.10-17.50; P=0.04). There was marginal significance for mechanical ventilation (OR=2,95; IC95%=0.90-9.75; P=0.07). In adjusted models for death, IRAB bacteremia was associated with greater risk (OR=4.89; 95%CI=1.31-18.18; P=0,02), alongside with age (OR=1.04; 95%CI=1.01-1.07; P=0.009). Of all IRAB isolates, 27 were grouped in 7 PFGE clusters (each grouping 2 to 7 isolates), and 11 produced unique patterns. Most clusters were identified in more than one of study hospitals. CONCLUSIONS: The finding of polyclonal endemicity and association with admissions to multiple hospitals argues for the transmission of multidrug-resistant organisms through networks of healthcare. This points out to the necessity of implementing infection control measures with a regional rather than single-hospital approach.

[230]
Analysis of a customized isolation and contact precaution protocol in a rehabilitation hospital

VIVIANE MARIA DE CARVALHO HESSEL DIAS; SANDRA LEAL NUCINI

REHABILITATION HOSPITALAR CENTER ANA CAROLINA MOURA XAVIER, STATE OF PARANÁ, BRAZIL.

Isolation and contact precautions (ICP) have been proposed by the guidelines as a mandatory protocol to prevent multirresistance and infections. However, according to healthcare institution profile, this routine can have more collateral effects than benefits, especially at a rehabilitation hospital, were most of the applied therapies are based on occupational activities and social interaction. Objective: Analyze the implantation of a modified IPC protocol and the epidemiology of hospital infection index (HII), as well as the sensitivity profile (SP), in a rehabilitation hospital. Methods: Before 01/09/2016, all patients that had risk factors to be colonized with a multidrug resistant organism were included at ICP until surveillance swab results. After this date, all the patients must be submitted to a checklist hospital admission validated by the infection control nurse, advocating indication of ICP to risk patients only if presence of draining secretions. Data on surveillance swabs (SS), hospital infection index and sensitivity profile were analyzed retrospectively between six months before and after the intervention. Results: Of 97 patients evaluated between 01/09/2016 and 28/02/2017, 81 (93%) had SS collected and 11 (13%) had ICP empirically instituted. All other patients were included at the standard precautions (SP). Thirteen SS had positive relevant results, but only 6 of these had been put in empirical isolation. The average HII was 7,7 and 3,6 % on the six months pre and post intervention (p=0,23). E. coli was the most common isolated microorganism on clinical material in both periods and sensitivity were 62%/84% to ciprofloxacin and 94%/92% to meropenem respectively. Conclusion: Considering the characteristics this particular hospital, despite less empirical isolation contact precautions there was no modification on HII as well sensitivity profile of the hospital. We considered that this intervention could optimize the patient therapies without any apparent additional risk.

[231]
Automation of endoscope processing in an endoscopy unit in the central west of Brazil

ADRIANA DA SILVA AZEVEDO; MARIUSA GOMES BORGES PRIMO; SIMONE VIEIRA TOLEDO GUADAGNIN; ANACLARA FERREIRA VEIGA TIPPLE; ELLEN SYNTHIA FERNANDES DE OLIVEIRA

UNIVERSIDADE FEDERAL DE GOIÁS, BRAZIL.

Introduction: Processing automation is defined as the use of equipment that performs one or more processing steps. It is considered advantageous in relation to the manual, for increasing the quality of processing and reducing occupational risk. However, the configuration of endoscopes is a challenge for any processing method. Aim: To report successful experience of the processing automation in the endoscopy unit of a Public University Hospital of Goiânia in the Central West of Brazil. Interventions: During twelve years were made efforts to automate processing in endoscopy. The adaptation of the physical structure began in 2005 and progressed for more than 11 years, even with the barriers, the service was reopened in 2015. In 2016, the educational process occurred regarding the handling of the equipment and optimization of work processes; protocols were reviewed; adjusted electrical and hydraulic requirements and water filtration devices. In 2017, the service obtained two processors, two sets of guns and a locker for the guard, items that were indispensable arsenal in the processing automation. Results: With automation, parameters of concentration, temperature and immersion time were monitored, which contributed to the reduction of adverse events. Cases of allergy and or intoxication were not reported, which was attributed to less exposure to chemical agents. The time spent with the endoscopes was lower. The team reported satisfaction in the performance of tasks, which attributed to the standardization of work processes. There was less corrective maintenance. The guns optimized the drying of the channels, it is known that moisture after cleaning dilutes the concentration of the germicide and interferes with the expected action, favoring the selection of resistant strains and the microbial growth during the storage period. Conclusions: The automation was considered efficient, which provided safe and qualified services, besides the satisfaction of the work team.

[232]
Healthcare-associated infections (HAI) in patients who participated in animal-assisted activities(AAA)

MARIA EMILIA BATISTA DE SOUZA; CAMILA DA SILVA BICALHO; MARIA HELENA DA CRUZ SPOTON; REGINA CELIA ROCHA; ROSEMEIRE DA SILVA PEREIRA; VANIA RODRIGUES PEREIRA; DANIELA MARIA BISPO; ANA CAROLINA PUIN DA SILVA; MARIANA RODRIGUES SANTIAGO; MICHELY FERNANDES VIEIRA; RAQUEL HIGA CARNEIRO; LIGIA CAMERA PIERROTTI; EDSON ABDALA

INSTITUTO DO CÂNCER DO ESTADO DE SÃO PAULO (ICESP), SÃO PAULO, BRAZIL.

It has been a long time since, domestic animals were an important source of vitality, with cultural change, the companion became a faithful friend. Currently the domestic animals have become present in the health services as part of the treatment of the patients. However, the role of animals in the transmission of zoonotic pathogens and cross-transmission of human pathogens in hospital institutions remains poorly studied. Therefore, patient safety should be prioritized using standard measures of prevention and control of infections in order to prevent the transmission of pathogens from animals to humans in health services. To describe the AAA in a public cancer hospital and the cases of infections associated with the activity. Intervention: A multidisciplinary group was created on 08/12/2015, with the purpose of regulating AAA in order to make possible the activity in the hospital. After reviewing the literature, inclusion and exclusion criteria were defined. Patients are evaluated the day before the visit by a psychologist about the desire to participate in the activity and for the nursing in relation to the presence of neutropenia, open wounds, isolation (contact, airborne, droplet, etc), presence of invasive devices that are the criteria for exclusion. The patients participating in the activity are followed during hospitalization up to 30 days afterwards to evaluate the outcome in relation to the infection. In this study, the criteria for HAI diagnosis was accordingly to the CDC 2015 surveillance definitions. Between 09/15 and 12/16,80 patients were evaluated, of these fulfilled inclusion criteria to participate in the activity 70 patients. The patients included were hospitalized on average 14 days, being on average 6 days after AAA. None of the patients presented HAI within 30 days of AAA. AAA is a safe activity since it was based on inclusion and exclusion criteria validated in the literature since the patients followed up in the period did not present a HAI diagnosis.

[233]
Improvement science in practice: impact on the decrease of healthcare associated infection in an ICU

RAISA BEATRICE NOVO[1]; NATALY CORTEZ TOSSI DOS SANTOS[1]; DOMINGO VICENTE R. LOPES[1]; PAULO FERNANDES DOS SANTOS[1]; ANTONIO LUIZ EIRAS FALCÃO[1]; TALITA SACARDI P. MARSOLA[1]; GLAUCIA FERNANDA VARKULJA[1]; CAMILA LAJOLO[2]; CAMILA SARDENBERG[2]; ADEMIR JOSÉ PETENATE[3]; PAULO BOREM[3]

HOSPITAL SANTA CATARINA; ASSOCIAÇÃO CONGREGAÇÃO SANTA CATARINA; INSTITUTE FOR HEALTHCARE IMPROVEMENT, BRAZIL.

Background: In order to minimize suffering by reducing healthcare associated infection (HAI) related to invasive devices, Hospital Santa Catarina in partnership with the Institute for Healthcare Improvement (IHI),initiated a training program aiming the strengthening of patient safety with strategies based on promotion of safe, effective and efficient care centered on people by the change of practices, behaviors and attitudes. This program followed the improvement science, which aims to understand the problem, develop a methodology, test it and implement it. Interventions: In the period between June 2015 and December 2016,a group of ICU professionals, directly and indirectly responsible for care were trained in improvement science to reduce HAI related to invasive devices. Initially, a 30% reduction goal was set for each topography-central line associated bloodstream infection(CLABSI),ventilator-associated pneumonia(VAP) and catheter associated urinary tract infection(CAUTI),ensuring 100% of adherence to prevention bundles on hospitalized adults, in a 16-bed general ICU, which serves clinical-surgical patients, with average age of 87 years. After several learning meetings and conference calls with IHI instructors, strategies such as literature review for best evidence for bundle creation, daily huddle, PDSA's appliance (plan, study and action),among other actions were taken in order to achieve the initial goal. Results: After 18 months of program, the initial goal was exceeded and significant reduction was observed:53% reduction in CLABSI(median from 4.81 to 2.25),87% reduction in VAP(median from 6.65 to 0.84) and 84% reduction in CAUTI(median from 2.36 to 0.36).Conclusion: IHI improvement science methodology showed a relevant impact on the HAI decrease. The experience of care through sustainability process, designing and implementing projects focused on patient care has provided us an approach that has helped increase the chances that the changes we make will result in lasting improvement.

[234]
Evaluation of the microbiological profile of a general adult ICU in the first year of activity

SIMONE FOSSILE ZIEHLSDORFF; WILLY MAMORU HIRAGA; LEANDRO RADÜNZ

HOSPITAL E MATERNIDADE JARAGUÁ, BRAZIL.

Introduction: at the beginning of general adult ICU activities, most patients came from other health institutions. even though it was a new ICU, the number of HAI was high and there was bacterial diversity even with intense educational actions, contemplating precautionary measures and encouraging wash hands. in a given period, the reduction of bacterial diversity, HAI rates and isolations by multiresistant bacteria was observed, with no change in the work process. objective: to evaluate the alteration of the microbiological profile and the reduction of HAI of a general adult. method: retrospective evaluation of the medical records of patients admitted to the adult ICU in the 10-month period. it was observed that the clinical profile of the patients had changed in a certain period and that during the period of data change an administrative measure occurred in which the new ICU started to receive patients only from the entrance door of other institutions and the other patients were referred to other UCIs. results: the admission of patients to another institution in the first period was 61, of these 28 the surveillance culture was positive and 17 were MDRO and in the second period of 72 patients, 19 of these were positive and 4 of them were MDRO. the incidence density in the first period was 31.10 for VAP, 7.22 for UTI and 9.90 for CLABSI, and in the second period it was 29.85 for VAP, 4.47 for UTI, 3.05 for CLABSI . Polimixin consumption of 151 bottles and 85 bottles. conclusion: after changing the ICU admission routine, there was a decrease of: 19.35% of patients who came colonized from another institution; 76.47% in the number of patients colonized by multiresistant bacteria; reduction of incidence densities of 4.02% in VAP, 37.99% in UTI and 69.21% in IPCS; and a 44.37% decrease in the use of Polimixin B in the ICU. these data reinforce the need to identify multiresistant germs, isolation and care in control for the reduction of HAI.

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The impact of decolonization in the reduction of surgical site infection post mastectomy

LARISSA GARMS THIMOTEO CAVASSIN; ELAINE MACIEL SANTOS; MIRIAN DAL BEM CORRADI; LIDIA MARIA DE SOUZA LACERDA; ROSANA SOARES BONANHO; LUCILENE DE FATIMA ROCHA COVA; MAURA SALAROLI OLIVEIRA

HOSPITAL SIRIO LIBANES, SÃO PAULO, BRAZIL.

Introduction: surgical site infection is one of the most frequent health care related infections and compliance to recommended preventive measures reduces its incidence. One strongly recommended measure is S.aureus decolonization which consists of the preoperative use of nasal mupirocin and preoperative bath with chlorhexidine. Objective: To promote the universal decolonization of patients who will undergo breast surgeries with breast cancer diagnosis and check the impact in reducing surgical site infections Methods: The study was conducted in a private tertiary hospital with patients with breast cancer that would be doing mastectomy. In August, 2016 a decolonization program was introduced to every patient to be submitted to a mastectomy. The patients received a kit consisting of mupirocin ointment and 2% degermant chlorexidine. They were instructed to have a daily bathing with the chlorexidine solution and to apply the mupirocin ointment in their nostrils twice a day in the five days before the scheduled surgery. Printed instruction written in simple language and with pictures were provided to aid in the understanding of the procedure. We compared the surgical site infection rates in the period pre and post introduction of the preoperative decolonization procedure. Results: There was a 30% reduction in the rate of surgical site infection in the period post introduction of the decolonization procedures. Conclusion: The implementation of a universal decolonization protocol was effective in reducing the rate of surgical site infection. The multidisciplinary team's involvement was essential to the success of the action. The measure will be extended to other clean surgery specialties.

[237]
Characterization of the modes of exposure to blood and body fluids among community health agents

FABIANA RIBEIRO DE REZENDE[1]; TAUANA SOUSA AMARAL[2]; CLERY MARIANO DA SILVA ALVES[3]; THAIS DE ARVELOS SALGADO[4]; SILVANA LIMA VIEIRA DOS SANTOS[2]; ANACLARA FERREIRA VEIGA TIPPLE[2]

HEART HOSPITAL OF GOIAS; FEDERAL UNIVERSITY OF GOIÁS; IRMÃ DULCE PROFESSIONAL EDUCATION CENTER; CLINICS HOSPITAL OF THE FEDERAL UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: community Health Agents (CHA) are health care workers (HCW) who work in primary care through home visits. Legally their specific duties are not recognized as activities that carry risk of exposure to blood and body fluids (BBF). This study aims to verify the involvement of CHA in training on biological risk (BR) and biosafety; identify occupational exposure of CHA to BBF; detail the avenues, circumstances, and BBF involved in the exposure; describe post-exposure conduct. Methods: cross-sectional, descriptive study conducted in the family health centers of a health district of the city of Goiania, Goias after ethics approval. CHA participated who were performing their duties between September 8 and November 13, 2015, when data collection was performed. Data collection was via self-administered questionnaire during the work period. Data were analyzed with SPSS software. Results: participants were 80 CHA. Seventy-two reported training, and 52.8% reported that the content included some topics related to BR and biosafety. Twenty-three (28.8%) CHA experienced exposures, 10 (43.5%) of them having multiple exposures, totaling 58 incidents. Exposures were cutaneous, percutaneous, through mucous membranes and human bites involving saliva, urine, blood, feces, vomit and sputum. Most incidents involved saliva on unbroken skin, or mucous. Most of the CHA were exposed during activities legal for their profession, but there was a high number of professionals who performed tasks inappropriate for their job. After exposure, 63.8% washed the area, while 29.3% used soap and water. Conclusion: the CHA participating in this study are occupationally exposed to saliva, blood and other human secretions with peculiar characteristics, but were mostly unprepared to perform the appropriate biosecurity measures. This requires a review of the characterization of this job class as free of BR, and appropriate risk management.

[238]
Hawthorne effect in untrue post educational improvement of hand hygiene adherence

LUIS GUSTAVO OLIVEIRA CARDOSO; RENATA FAGNANI; TIAGO CRISTIANO LIMA; MIRTES LOESCHNER LEISCHSENRING; CHRISTIAN CRUZ HOFFLING; LUIS FELIPE BACHUR; MARIANGELA RIBEIRO RESENDE

UNIVERSIDADE ESTADUAL DE CAMPINAS (UNICAMP), SÃO PAULO STATE, BRAZIL.

Introduction: Most healthcare associated infection are preventable trough efficient hand hygiene (HH). The five moments for HH (5MHH) campaign defines: 1- before touching a patient, 2- before clean/aseptic procedures, 3- after body fluid exposure, 4- after touching a patient, and 5- after touching patient surroundings. The adherence to HH in each moment is crucial to control multidrug resistant organisms transmission, including carbapenem resistant enterobacteria (CRE). However, achievement of high rates of performance is a challenge and surveillance strategies are subject to outcome bias due to Hawthorne effect (HE), when the behavior is modified in response of being observed. Intervention: During a CRE outbreak in a 20-bed ICU an educational HH program was implemented. The 5MHH accomplishment was directly observed by infection control practitioners (ICP) before (T0) and after (T1) the program; by trained observers unknown to the staff (T2); and again by the known ICPs (T3). The results were expressed in accomplishment percent, mid-P exact test or chi-square, and a 2-tail p value < 0.05 used to determine statistical significance (OpenEpi v.3.01). Results: 5MHH performance was lower at T0 than T1 (60x80,3%, p=0,002). T2 rates were slightly lower than T0 (51,8x60%, p=0,07) and significantly lower than T1 (51,8x80,3%, p<0,001). T3 rate was similar to T1 (77,8x80,3%, p=0,73) but higher than T2 (77,8x51,8%, p<0,001). Adherence to moment 4 was similar in all times. Different rates were seen mainly in moment 1. Conclusion: Improvement of HH adherence observed post educational program in an ICU outbreak setting was due to Hawthorne effect. Mainly the accomplishment to hand hygiene before touching a patient was affected by perception of being observed, while the rate of HH after touching a patient wasn't neither for education nor for HE. These results indicate that multiples, including behavioral, approaches are necessary to a sustained and real improvement of HH adherence.

[239]
Report of implementation of the governance service in a hospital on north of Paraná

RENATA APARECIDA BELEI; JAYNE AKEMI OHARA; MARCIA PERUGINI; MARSILENE PELISSON; VIVIAN BIAZON EL REDA FEIJÓ; MARIA APARECIDA FURLANETO DIAS; GILSELENA KERBAUY LOPES; CLAUDIA MARIA DANTAS DE MAIO CARRILHO; FLÁVIA OUSSAKI; LUIZA RITA PACHEMSHYS

UNIVERSIDADE ESTADUAL DE LONDRINA, STATE OF PARANÁ, BRAZIL.

Introduction/Objective: the work of governance in hygiene and cleaning has become a tendency in hospital, because it presents itself as a new management perspective, reorganization of services and actions, in the meaning of rationality and adequacy of resource use. This service can act as a prevention measure of hospital infection and ensure comfort and welfare to the patient. Describe a service implantation of governance in a high complexity hospital. Method: it is an experience report about the implantation of a governance service of an tertiary hospital on north of Parana, during the period of 2016. The service was implanted on semi-critical units of adult hospitalization, due to high rotativity of beds. It was done training on three company employees of hygiene to evaluate the service's effectiveness, swab samples were taken from environment before and after the bed's disinfection. The swabs were collected from the beds' grids and cranks, mattress, serum support, air and oxygen exit, stand, walls and switches and bedside table, thus, after done bed's cleaning, has been standardized a way to identify visually the bed clean and disinfected. Results: on the pre-disinfection collection, has been a 22,2% positivity on the samples, and the microorganisms found were Enterococcus sp. resistant to vancomicine on the serum support, and the Klebsiella pneumoniae multirresistent on the mattress. After the disinfection of beds, new collection of material was realized and 100% of the samples came back negative. Conclusion: it is concluded that the implementation of the governance service was effective in the adequate disinfection of the beds collaborating to help reduce hospital infection, in addition it shows improvement in the patient's hospitalization in the hospitalization unit, presenting an aseptic and hospitable environment.

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Ventilator associated pneumonia in a trauma university hospital in southern Brazil from 2010-2016.

MARIA ESTHER GRAF; DIEGO MAGATAO; JEFFERSON BUENO; ANA PAULA ARAUJO; KELLY LOPES; ROGERIO MEHRET; LUANA TANNOUS; LORENA PIRES; EDUARDO PIERIN

HOSPITAL UNIVERSITARIO CAJURU PUC PR. STATE OF PARANÁ, BRAZIL.

Ventilator-associated Pneumonia (VAP) is common in intensive care units (ICUs) and has a huge impact on morbidity and mortality. This study's objectives were to evaluate the VAP densities and describe the associated interventions in a historical perspective. Since 2010, monthly meetings have been held with leaders to discuss infection indicators and action planning. The first version of the VAP bundle was implemented including oral hygiene with chlorhexidine, bedside elevation and daily awakening, and in 2011 the VAP incidence density median was 43/1000 ventilator days. From it, an Ishikawa diagram was built and raised critical questions to be addressed: incorrect aspiration technique, low adhesion to the VAP bundle, high turnover of nurses, flawed vacuum network and lack of non-invasive ventilation equipment. Along 2012 these demands were worked out and the VAP density median dropped to 26. Throughout 2013 the physiotherapists started integrating the ICUs night shift staff, along with verifying a three times a day check list of parameters: cuff pressure, possible ventilator asynchrony, hypersecretive conditions, oral hygiene quality and head elevation. The monthly critical discussion of the indicators raised in this evaluation enabled directed actions according to work shifts, reducing to 21 the VAP median between 2013-2014. From 2015, because of the trauma scenario where conditions as chest gunshot wounds and bronchoaspiration in prehospital intubation are common and lead to the development of VAP despite of the preventive measures, new preventable VAP criteria were established. In 2015-2016 the overall VAP median was 19.5, and 9.38 was the number considered to be preventable. PAV is the most prevalent infection in the studied ICUs. The actions performed leaded to a 53% reduction of the overall VAP density in the studied period. The continuous implementation and review of prevention actions with a multidisciplinary team proved to be effective in the VAP control.

[242]
Health assistance infections and factors associated with the postoperative hepatic transplant

NATÁLIA DE LIMA VESCO[1]; LUCIANA CARVALHÊDO FRAGOSO[1]; FRANCISCA DE MELO BESERRA[1]; MARIA ISIS DE FREIRE AGUIAR[2]; NAIANA PACÍFICO ALVES[2]; LARA ANÍSIA MENEZES BONATES[1]; JORGE LUÍS NOBRE RODRIGUES[1]; EVELINE SANTANA GIRÃO[1]; GERMANA PERDIGÃO AMARAL[1]; GEOVANIA MACIEL DE SOUSA[1]

1.HOSPITAL UNIVERSITÁRIO WALTER CANTÍDIO; 2. UNIVERSIDADE FEDERAL DO CEARÁ. STATE OF CEARÁ, BRAZIL.

Introduction / Objective: To identify the incidence of health care-related infections and their associated factors during the postoperative period of patients undergoing liver transplantation in a public hospital in Fortaleza. Method: Retrospective, descriptive study with a quantitative approach, performed with 53 liver recipients in the first half of 2015. Data were collected through medical records, outpatient records and notification of infections. Results: Fifteen patients (28.3%) presented infection during the first month, with clinical sepsis (n = 6; 37.4%) followed by respiratory tract infection (n = 3; 18.8%), urinary tract (n = 3, 18.8%), surgical site (n = 3, 18.8%), and bloodstream infection (n = 1, 6.2%). The patients who presented a statistical association in relation to the non-occurrence of infections were the group of married patients and the indication of cirrhosis due to hepatitis C. The mean number of days of hospitalization in the postoperative period, the use of the immunosuppressant mycophenolate mofetil and the mean of the Use of some invasive devices, were identified as the factors associated with the occurrence of infections, being statistically significant, p = <0.05. Conclusions: To identify the incidence of infections related to health care and its associated factors in patients undergoing liver transplantation, may subsidize the direction of health actions, in order to reduce the morbidity and mortality associated with infections and optimize the recovery of these patients.

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Ventilator associated pneumonia in a trauma reference university hospital in southern Brazil 2015-16

MARIA ESTHER GRAF; DIEGO MAGATAO; JEFFERSON BUENO; ANA PAULA ARAUJO; KELLY LOPES; ROGERIO MEHRET; LUANA TANNOUS; LORENA PIRES; EDUARDO PIERIN; ELIANA FUGITANI; RODOLFO KOGERATSKI

HOSPITAL UNIVERSITARIO CAJURU PUC PR, STATE OF PARANÁ, BRAZIL.

Ventilator associated pneumonia (VAP) is common in intensive care units (ICUs) and has a huge impact on morbidity and mortality. This study's objective was to describe the epidemiological characteristics of VAP from 2015 to 2016. A cross-sectional analytic study was carried out in three Brazilian public health system's ICUs with a total of 29 beds. PAV represented 16% (n = 154) of healthcare-related infections in this period. The overall VAP incidence density median was 19.5/1000 ventilator days. The patient's mean age was 51 years and 76% of them were male. The mean time between orotracheal intubation and the onset of symptoms of pneumonia was overall 9.5 days, and it was 5 days when intubation occurred in a prehospital setting (27% of events). Of all VAP episodes, 59% occurred in trauma patients, most commonly related to fall, firearm, motorcycle and car injuries, respectively 27, 15, 14 and 12%. Regarding the microbiological profile, 33% of the cases were caused by multidrug-resistant bacteria (MDR), the main ones in tracheal aspirate being *Klebsiella pneumoniae* (n = 34), *Acinetobacter baumannii* (n = 31) and *Pseudomonas aeruginosa* (n = 31), with carbapenem resistance reported in 38, 100 and 22.5% respectively. *Staphylococcus aureus* was identified in 30 samples and 17% were methicillin resistant. Secondary bacteremia was found in 11% of cases and the 30-day mortality was 53%. APACHE analysis was performed in 67% of the patients and the mean score was 21. The possibility of VAP prevention was analyzed individually under local pre-established criteria and 44% of them were considered non-preventable since risk factors for its development occurred prior to admission. This study identified high mortality of VAP patients and pointed out the main trauma mechanisms related to it. One third of the infections occurred by MDR bacteria. Infection control actions associated with health policies to reduce urban violence are necessary to optimize the VAP prevention in ICUs.

[244]
Reducing late-onset sepsis in neonates: the Salus Vitae experience

RAQUEL KEIKO DE LUCA ITO[1]; FRANCISCA MORAES CHAGAS[1]; SOLANGELA LOPES[1]; FLAVIANA GONÇALVES RUBIO[1]; FERNANDA ALUCCI[1]; NEWTON TOMIO MIYASHITA[1]; CAMILA LAJOLO[2]; CAMILA SARDENBERG[2]; ADEMIR JOSÉ PETENATE[3]; PAULO BOREM[3]

AMPARO MATERNAL; ASSOCIAÇÃO CONGREGAÇÃO DE SANTA CATARINA; INSTITUTE FOR HEALTHCARE IMPROVEMENT, BRAZIL.

Background: Late-onset sepsis (occurring after 2 days of age) is an important problem at Neonatal Intensive Care Units (NICU), associated with increased hospital length of stay, total hospital costs, and mortality. We aimed to reduce late-onset bacterial infections in neonates by using collaborative quality-improvement methods to implement evidence-based care. We hypothesized that these methods would result in a 50% reduction in nosocomial infection. Intervention: We conducted an interrupted time-series study in our NICU, by participating as a group in Salus Vitae, a patient safety initiative developed in partnership with Institute for Healthcare Improvement (IHI) by Associação Congregação de Santa Catarina (ACSC), a non-profit, faith-based health care system. The method offered by IHI was the Improvement Science in Action (ISIA). The intervention began in June 2015 and continued through March 2016. We used the World Health Organization multimodal hand hygiene improvement strategy and the IHI's Breakthrough Series quality-improvement model to facilitate implementation of evidence-based catheter care. Our NICU also submitted monthly data on hand hygiene product consumption, catheter-days, patient-days, and episodes of infection. Data were analyzed by using statistical process control methods. Results: Hand hygiene product (alcohol-based rub) consumption increased from 21.8 ml to 63.3 ml per patient-day. Compliance with components of evidence-based indwelling catheter care reached over 95% by March 2016. There was a reduction in the late-onset sepsis from a baseline of 9.33 infections/1000 patient-day to 5.52 infections/1000 patient-day. Conclusions: There was a significant reduction in the incidence of late-onset sepsis after the intervention, but the magnitude was less than hypothesized, perhaps because the time between the start of the interventions and the end of the project was short.

[246]
Perception of community health workers about biological risks in their work activities.

HÉLIO GALDINO JÚNIOR; CARLOS MATHEUS PIERSON COLARES; GEORGE OLIVEIRA SILVA; ANACLARA FERREIRA VEIGA TIPPLE

UNIVERSIDADE FEDERAL DE GOIÁS, BRAZIL.

Introduction: The Community Health Workers (CHW) is the front-line practitioner of the Family Health Strategy (FHS). Through home visits, it connects the population to the health unit and identifies individuals and families in situations or risk of morbidities. In addition to exposure to physical and psychological risks, the literature points to a biological risk in this professional category, but there are few studies in this area. Objective: To identify the perception of the CHW about the biological risk in their work activities. Methods: A quantitative cross-sectional study was conducted with 30 community health agents from a health district in the city of Goiânia-GO. After the ethical considerations, a questionnaire was applied that included socio-demographic data and the following question: "what activities do you carry out that, in your opinion, expose you to biological risk?". The data were analyzed by the Statistical Package for the Social Sciences (SPSS® 21.0) and presented in descriptive statistics. Results: Predominated female professionals (100%), with more than 10 years of activities (53.3%), and who, for the most part, did not perform a course and / or training on biological risk before the beginning of their activities such as CHW. 36.6% reported no activity to expose them to biological material. 46.6% reported that there is exposure at the home visit in contact with leprosy and tuberculosis patients and exposure to saliva. Another 13.3% identified that the biological risk is related to the bite of domestic animals. The capillary glycemia test was reported by 6.7% of professionals as an activity involving biological risk. Conclusions: This study shows that biological risk is little known by community health workers, which increases the biological risk in this professional category. Therefore, this professional should be able to understand the activities that expose them to risks as well as the precautionary measures to avoid them.

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Klebsiella pneumoniae carbapenemase-producing: management and outbreak control in an intensive care

LETÍCIA MARIA ACIOLI MARQUES; PRISCILA COSTA PIMENTEL; ADRIANA MARIA SILVA; SILVANA PRINGLER; DAFNE SILVA; FABIANNE CARLESSE

GRAACC/IOP/UNIFESP (UNIVERSIDADE FEDERAL DE SÃO PAULO), BRAZIL.

Klebsiella pneumonia is a gram-negative bacillus, some of these has an enzyme (carbapenemases) capable of hydrolyzing drugs and became resistant. The mechanism of colonization and transmission of this agent is unknown, but the mortality related with this agent may be 3 to 4 times higher when compared to other bacterial infections and used to be related to unfavorable outcomes . The incidence of these infections in immunocompromised children is still poorly described. In this way, this article aims to describe the experience of an outbreak of Klebsiella pneumoniae carbapenemase-producing in an oncologic pediatric hospital's UCI. Interventions: After the identification of an infection by K. Pneumoniae KPC's producing in a patient not previously colonized/infected (04/12/2015), surveillance and investigation routine were started. Were proposed some actions that included: adequate treatment of existing infections; orientation of patients, relatives and professionals regarding the importance of hand hygiene and contact precautions and reinsure the environmental care. The outbreak was solved9 months after, and the surveillance measures remained until the last colonized patient was discharged. Nine cases of infections were identified and all of these were successfully treated, 25 cases of colonization all patients were previously colonized. No deaths were identified and all infections were successful treated. The colonized patients were followed up until decolonization (considered after 4 consecutive negative anal swab samples collected 1 week apart). From the molecular analysis of agents involved in the infections it was possible to identify that the outbreak occurred through the cross-transmission . It is believed that the commitment of the multiprofessional team in adherence to the proposed measures to contain the outbreak, as well as the surveillance of the inpatient unit, are essential factors for the control and positive outcome of the outbreak.

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Staphylococcus aureus from bloodstream infection: antimicrobial resistance surveillance

SIMONE ARANHA NOUER; ANDREIA PAREDES DAMASCO; THAINA MIRANDA DA COSTA; PRISCYLLA GUIMARÃES MORGADO; KATIA NETTO SANTOS

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO (UFRJ), BRAZIL.

Staphylococcus aureus is an important cause of bloodstream infections (BSI). Vancomycin remains as the first choice for treatment of methicillin-resistant S. aureus (MRSA) BSI. New antimicrobials, such as linezolid and daptomycin, have been used in BSI therapeutic. Previous studies shows that vancomycin-intermediate S. aureus (VISA) tend to be sensitive to the sulfamethoxazole-trimethoprim (SXT). Recently, ceftaroline was approved in Brazil, but not for BSI treatment. The present study evaluated the antimicrobial resistance in S. aureus isolates from BSI of patients at a university hospital in Rio de Janeiro between 2011 and 2015. The minimum inhibitory concentration (MIC) was determined for ceftaroline, daptomycin, linezolid, oxacillin, teicoplanin, vancomycin and SXT by the broth microdilution method. The cefoxitin disk diffusion test detected MRSA isolates and the staphylococcal cassette chromosome mec (SCCmec) type was determined by PCR. The clonal profile was assessed by the PFGE. Vancomycin heteroresistance (hVISA) was evaluated for MRSA with vancomycin MIC of 2 mg/L using BHI agar supplemented vancomycin and E-test methods (macromethod and GRD), being confirmed by analysis of the population profile/area under the curve (PAP/AUC). A total of 200 S. aureus isolates were analyzed and 54 (27%) were MRSA, carrying SCCmec types II (48%) or IV (52%). The most frequent clones were USA100 (44,4%), USA800 (27,7%) and USA1100 (18,5%). MRSA isolates showed higher MIC values for ceftaroline, daptomycin and vancomycin than methicillin-sensitive (MSSA) isolates. A high rate (23%) of daptomycin non-susceptible was detected, with resistance rates increasing through the years of study. Six (3%) isolates were VISA. PAP/AUC analysis confirmed that six of the 19 MRSA isolates with vancomycin MIC of 2 mg/L were hVISA. The results showed that the MIC90 for ceftaroline, daptomycin and vancomycin are in the susceptibility threshold, indicating the need of continuous surveillance.

[250]
Incidence of multiresistant pathogens in cancer patients

LARISSA DI LEO NOGUEIRA LARISSA COSTA[1]; LEILA FERREIRA BARBOSA[2]; ELZANIRA SILVA DOS SANTOS[2]; CONCEIÇÃO DE MARIA PEDROZO E SILVA DE AZEVEDO[1]

1.UFMA; 2. HOSPITAL DO CÂNCER ALDENORA BELLO, STATE OF MARANHÃO, BRAZIL.

Introduction: A pathogen is considered resistant when it is capable of multiplying in a concentration higher than the one that is achieved by the drug in the infection site. Infections in hospital environment may be linked with multiple factors and the cancer patient is in even more susceptible conditions due to immunosuppression, chemotherapeutic agents, prolonged hospitalizations and antimicrobials use. It was aimed to identify multiresistant microorganisms that were isolated in cancer patients. Methods: It is an retrospective, transversal, uncontrolled study, performed between January and December 2016, in an oncological hospital in São Luís (Maranhão). Susceptibility testing of microorganisms to antimicrobials were performed with the semi-automated and automated VITEK identification method. Results: 324 cultures were analyzed with Gram-positive and Gram-negative pathogens growth. The incidence of multiresistant pathogens was 19,44% (n = 63) in this sample. The most common agent was Pseudomonas aeruginosa (38,1%), followed by Acinetobacter baumannii (15,9%), Klebisiela pneumoniae (14,3%) and Escherichia coli (9,5%). Citrobacter freundii and ESBL-producing Enterobacter aerogenes represented 4,8% e 3,2%, respectively. Ultimately, the Gram-positive, oxacilin and/or vancomicin resistant bacteria found were: Staphylococcus aureus (6,3%), Staphylococcus epidermidis (6,3%) and Enterococcus avium (1,6%). Conclusion: It may be concluded that there was an incidence of 19,44% of multiresistant bacteria in the analyzed cancer patients. The most common pathogens were: P. aeruginosa, A. baumannii and K. pneumoniae. Thus, it highlights the need for prevention and control of infections in this type of patient. It should be developed strategies that minimize the mortality rates caused by infections in oncological patients.

[252]
Fluconazole prophylaxis to reduce candidemia in the NICU: is it effective and safe?

CAMILA ALMEIDA[1]; LIVIO DIAS[2]; GISELY VETUCHE[1]; CHAYENNE MATSUMOTO[1]; MARIANA TOBARA[2]; ROSANA RICHTMANN[1]

1.HOSPITAL E MATERNIDADE SANTA JOANA; 2. PRO MATRE PAULISTA, SÃO PAULO STATE, BRAZIL.

Neonatal candidiasis is associated with significant morbidity and mortality. In two private maternities in Sao Paulo summarizing 190-NICU beds, the incidence of candidemia in extremely low birth weight babies (ELBW<1000g) before the introduction of fluconazole prophylaxis was 4.8%. In 2005 a protocol was implemented in both hospitals to reduce candidemia. Anal and tracheal cultures in ELBW were weekly collected. Colonized babies under CVC and/or mechanical ventilation received fluconazole prophylaxis 3 mg/kg twice a week for maximum 21 days or shorter if devices were removed. The incidence of candidemia reduced to 1.6% after this measure. In 2013 the incidence rose to 5.6% in ELBW and to 9.8% in babies weighting less than 750g. The prophylaxis protocol was updated and just babies < 750g received fluconazole regardless fungal colonization. No modification was made for babies between 750g to 1000g BW. The incidence of candidemia after this new intervention reduced to 1.1% in ELBW and to 1.3% in babies < 750g. In the past last eleven years 24 candidemias occurred in 1365 ELBW babies, after the start of the protocol, and 66.6% occurred in babies < 750g. Previous colonization were detected in 71% of the infected babies, 58% in more than one site. Candida albicans was the most prevalent specie affecting 50% of patients, while C.parapsilosis and C.glabrata infected 45.8% and 4.2% respectively. A total of 218 prematures < 750 g received fluconazole and there were no side effects in any case. Universal fluconazole prophylaxis to all babies < 750 g reduced dramatically the candidemia rates in this population. The prophylaxis was effective, safe and there was no replacement of Candida species with fluconazole resistance.

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S. aureus carriage among indigenous populations of the Amazon and the southeast region in Brazil

LIGIA MARIA ABRAAO[1]; CARLOS MAGNO CASTELO BRANCO FORTALEZA[2]; CARLOS HENRIQUE CAMARGO[3]; THAIS ALVES BARBOSA[2]; ELIANE PATRICIA L. PEREIRA-FRACHI[2]; DANILO FLAVIO M. RIBOLI[4]; LUIZA PINHEIRO[4]; MARIANA FAVERO BONESSO[2]; RODRIGO MEDEIROS DE SOUZA[5]; MARIA DE LOURDES RIBEIRO DE SOUZA DA CUNHA[4]

BOTUCATU MEDICAL SCHOOL, OSWALDO CRUZ GERMAN HOSPITAL; ADOLFO LUTZ INSTITUTE; NSTITUTE OF BIOSCIENCES OF BOTUCATU; FEDERAL UNIVERSITY OF ACRE, BRAZIL.

introduction: hospital-based studies have report high rates of S. aureus and MRSA in indigenous populations. however, in Brazil there are no data regarded to native individuals S. aureus colonization or infection. objectives: this study aimed to identify the prevalence and risk factors for the carriage of methicillin-sensitive and methicillin-resistant S. aureus (MSSA and MRSA) in indigenous populations located in the Amazon and Southeast regions of Brazil. methods: a total of 190 indigenous, was screened for MSSA and MRSA oral and nasal colonization. the samples were identified by traditional methods. cefoxitin and oxacillin impregnated disks were used for antimicrobial susceptibility determination. PCR was employed for mecA and virulence genes (enterotoxins [sea, seb, sec]; hemolysins [hla, hlb, hld]; exfoliatins [eta, etb, etd]; and biofilm [icaA, icaB, icaC e icaD]). multiplex PCR was used by SCCmec characterization. the genetic diversity (assessed by PFGE and MLST). for risk factors associated with S. aureus carriage it was perform an epidemiological analysis. results: prevalence of 47.6% was found for S. aureus nasal carriage and 0.7% of MRSA. S. aureus strains showed heterogeneity in the distribution of virulence factors with prevalence of hla (96,3%) and hld (80,6) genes; icaA (82,2%) and icaD (72,7%). data from the clonal profile and MLST highlighted the formation of clusters with clustering of isolates between the different states, at where ST5 was the most prevalent. epidemiological results have shown the absence of traditional factors to colonization and that the ethnicity factor may be related to the prevalence of S. aureus in human populations. conclusion: the results allow the inference that indigenous population are distinctly colonizated for S. aureus, with lower rate of MRSA and with bacteria with specifics virulence factors. besides, the ethnicity factor it seems to be related to the prevalence of S. aureus in special populations.

[262]
A prototype of ultra-safety in surgery

ELWAN SHERIFF, NAGWA KHAMIS

AIN SHAMS UNIVERSITY, EGYPT

Introduction: Safety in surgery is by no means perfect. Surgical site infection rates are between 7.1% (dirty wounds) and 2.1% (clean wounds) in the era of prophylactic antibiotics (NNIS). Other shocking rates include: 0.5-5% mortality, and up to 25% hospital complications. Aim: As ultra-safety could be achieved in some other disciplines (namely nuclear industry and civil aviation), a quotation of some guidelines is put forward. Intervention: The following steps are the tripod of an ultra-safe system:

1.) Team-work training, comprising briefing, standard communication, cross checking, assertion, decision making, and debriefing;

2.) Surgical safety checklists;

3.) Leadership action steps, as assembling the team, facilitating events, and ensuring actions become habits.

Result: Encountered barriers to ultra-safety measures in surgery are:

1.) Inherent limitations on maximum performance (we need no more regulations);

2.) Abandonment of professional autonomy (resistance to check lists);

3.) Transition from mindset of craftsman (surgeon) to that of an equivalent actor (team member);

4.) Need for system-level arbitration to optimize strategies (idea of surgeon's anonymity);

5.) Need to simplify rules and regulations (to break the ice of resistant mindset).

In contrast to surgery, civil aviation had overcome the first three barriers, and is working on the fourth and fifth ones. Conclusion: Safety in surgery is currently held back by barriers that have been half-way overcome in certain industries, giving a prototype to encourage similar endeavours in surgery.

[264]
The use of nursing diagnoses and interventions in the prevention and control of health care-associated infections

TALITA RAQUEL RAQUEL SANTOS[1]; MARIA CLARA PADOVEZE[2]

1.SCHOOL OF NURSING OF THE UNIVERSITY OF SÃO PAULO, BRAZIL.

Introduction/aims: The participation of nursing professionals in healthcare-associated infections (HAIs) occurs through qualification of direct and indirect care processes. This study aimed to identify both the recognition of human responses related to the risk and occurrence of HAIs and interventions implemented by nurses. Method: An observational, descriptive, prospective and longitudinal study performed at university hospital. In the first phase of the study were collected clinical and epidemiological data, as well as the most prevalent nursing diagnoses and interventions in nursing care charting. After this phase, the interventions defined in manuals and protocols of the institutional hospital infection control committee (HICC) were compared with those proposed by the nursing interventions classification (NIC) through the cross-mapping method. Results: The sample consisted of 159 patients, mostly elderly, hypertensive and diabetic, who were hospitalized on average 9.6 days. The main nursing diagnoses identified were: impaired tissue integrity, risk of falling and risk for unstable blood glucose. The main intervention activities were: monitor vital signs, maintain bed head at 30º/45º, monitor oxygen saturation and perform blood glucose testing. Among the activities recommended by HICC, 81.8% were mapped into NIC. The conformity only activities: maintain isolation, as appropriate and not wet catheter dressing in the bath had higher index to 60% of actual prescription in situations requiring such care. Conclusion: The diagnosis and activities nursing related to interventions more prevalent were primarily related to monitoring of vital signs and hygiene procedures. Specific actions towards preventing infection were prescribed, but in an insufficient number.

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Isolation practices at GIH (grande international hospital)

SAMANA SAINJU, ANJEELA KOIRALA, RASHMI GIRI, SUBHASH PSD ACHARYA, ANDREW TROTTER, ARJUN KARKI

DEPARTMENT OF INFECTION CONTROL, DEPARTMENT OF CRITICAL CARE MEDICINE, DEPARTMENT OF INTERNAL MEDICINE, DEPARTMENT OF PULMONARY MEDICINE, GRANDE INTERNATIONAL HOSPITAL, KATHMANDU, NEPAL, DIVISION OF INFECTIOUS DISEASE, IMMUNOLOGY AND INTERNATIONAL MEDICINE, UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE, CHICAGO

Introduction: Isolation refers to the precautions that are taken in the hospital to prevent the spread of an infectious agent from an infected or colonized patient to susceptible persons. Although isolation precaution is a measure of infection control practice, it has been rarely practiced in all parts of the hospital in the context of Nepal except in some cases. Since there is the infection control department at this hospital we have been practicing the isolation techniques under the isolation policy. According to IFIC we have been following the guidelines, we set out to improve quality patient care at our hospital, a 200 bedded multispecialty hospital in Kathmandu, Nepal. Aims/objectives: The aim of this study is to determine the isolation practice at Grande International Hospital (GIH). Implications: Implications included classes for all staff including physicians, nurses and support staff, training of nurses regarding isolation practices, improvement of availability of PPE, demonstrations using proper use of PPE especially N95 masks. Policy making regarding the importance of isolation practices. These practices were monitored in designated units like intensive care units (ICUs) and certain wards which are solely designated for isolations only. Methods: This is the retrospective observational study done in ICU, HCU, 8th Floor and Siddharth ward of Grande International Hospital. We collected data of patient from 1st May 2016 to 31st October 2016. All those positive cultures which are Carbapenem resistant in case of Gram negative and Vancomycin resistant Enterococcus, MRSA in case of Gram positive, Clostridium Difficile, suspected and positive case of H1N1, PTB cases etc are kept under isolation. Findings: The majority of isolation cases were in contact isolation (74.72%). Out of 136 Gram negative bacteria and 7 Gram Positive bacteria, Acinetobacter is found (47.05%), Klebsiella (25%), Pseudomonas (16.17%), Citrobacter (5.17%), Proteus (0.73%), MRSA (2.94%). In t

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Surgical instrument cleaning: enzymes for a superior protein soil removal

LUÍZA CARNEIRO CORRA GATTO, RAISSA DE SOUZA, JORGE AUGUSTO R. SABBAG

QUIMISA S/A

The cleaning step of surgical instruments are critical for an effective disinfection and the detergent selected for this process plays an important role in securing a proper soil removal reducing the risks of infections. The aim of this study was to compare the soil removal performance of a commercial alkaline detergent versus an enzymatic detergent containing proteases. The test pieces used focused on only protein soils. The investigation was performed in the washer-disinfector PG 8535 from Miele (with the minimal invasive surgery carriage from Miele E450). The whole cleaning process lasts 40 minutes and cleaning step lasts 5 minutes long at 40°C. Four different test pieces were applied:
a) Tosi® Flexichecks (in the corresponding Tosi® Flexicheck devices);
b) Tosi®;
c) Simicon RI;
d) Stf load checks.
After the cleaning process, the test pieces were visually inspected and ranked according to the residual soil. The results show that in all test pieces analyzed, the commercial detergents with Liquanase Everis® and Savinase Everis® (both proteases) have a superior protein soil removal than the commercial alkaline detergent and the blank tested (where no detergent was applied). The commercial detergents with proteases show 97% average cleanliness whereas the commercial alkaline shows 85%. These results mean that, under similar controlled conditions, proteases are essential ingredients to remove protein soils that cannot be properly eliminated by an alkaline detergent.

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Effectiveness of moist-heat sterilization (autoclaving) of medical devices in primary and secondary care public hospitals in Nepal

PANTA GOPAL; ANN RICHARDSON; IAN SHAW; PAT COOPE,

UNIVERSITY OF CANTERBURY

Introduction: Patients can contract healthcare-associated infections (HCAIs) while receiving clinical services in healthcare facilities. Inadequate sterilization of medical devices is one cause of such infections. Studies have indicated that a higher rate of HCAIs, especially the rate of surgical sites infections, in Nepal is associated with inadequate sterilization of medical devices. Since autoclaving is the most commonly used technique to sterilize medical devices, this study explores the effectiveness of autoclaving in primary and secondary care hospitals in Nepal. Method: Self-contained biological indicators containing 106 spores of Geobacillus stearothermophilus were used to evaluate the effectiveness of autoclaving. Of 88 primary and secondary care public hospitals, 13 were selected using stratified cluster sampling involving testing of 189 autoclave cycles. The autoclave cycles were also audited to assess compliance with basic requirements recommended by international guidelines and standards. The proportion of ineffective autoclave cycles was calculated, and factors associated with ineffective sterilization were identified. Results: The proportion of autoclave cycles found to be ineffective in primary and secondary care public hospitals in Nepal was 71% (95% CI: 46.8% -87.2%, SE: 9.5%). Factors associated with ineffective sterilization were type of autoclave, autoclave pressure, and duration of autoclave cycle. Conclusions: A high proportion of sterilization cycles in primary and secondary care hospitals in Nepal were inadequate. There is an urgent need for adjusting current sterilization practices and improving the effectiveness of sterilization. The methods used could be useful to other developing countries for assessing their sterilization practices.

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Preemptive isolation for gram-negative bacilli as prevention measures for hospital infection in intensive care unit: experience of a private hospital

FILIPE PIASTRELLI; ARIANE MELARE RAMOS DOS SANTOS; FATIMA MARIA VENANCIO PORFIRIO; DANIZA ELIZABETH RUBINA GONZALES; FERNANDA ZACARINI ROTITTO; REGIANE GIMENEZ MORDENTE; REGINA LUCIA BARBIN MARTIELO; SERGIO SONEGO FERNANDES

SEPACO HOSPITAL, SÃO PAULO, BRAZIL.

Introduction: Spread of gram-negative multidrug-resistant bacteria (BGN-MDR) is a challenge in hospital infection control. There are few studies available about the impact of preemptive contact precautions (PCP) for BGN-MDR. Evaluation of the impact of an institutional protocol to PCP for patients with risk factors for BGN-MDR infection in an intensive care unit (ICU). Interventions: a comparative analysis of the patients admitted to the ICU in two moments: pre-intervention (January to June 2016), patients were isolated after identification of BGN-MDR in clinical cultures; post-intervention (July 2016 to march 2017), patients were isolated when more than 7 days after hospitalization and BGN growth in partial clinical cultures. PCP were considered adequate when final culture results identified BGN-MDR. Comparison of the difference of days between culture obtained and institution of adequate isolation was analyzed. Results: we evaluated 49 patients, 17 and 32 in the first and in the second period, respectively. The mean difference in days between culture and isolation was 4.29 days for the 1st period and 2.91 days for the 2nd period. 84.4% of the patients with PCP had final culture results with BGN-MDR, anticipating in a mean of 1.4 days the contact isolation of these patients. Conclusion: PCP anticipated in 1.4 days the isolation of patients with positive samples for BGN-MDR. This results may contribute in reduction of the spread of resistant bacteria in the hospital environment. longer follow-up time is needed to assess the global impact of these measures.

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Antibiotic use in Brazilian teaching hospitals

FILIPE PIASTRELLI[1]; ICARO BOSCZCOWSKI,[2]; GERALDINE MADALOSSO,[3]; DENISE BRANDAO[3]; MARISTELA P. P. FREIRE[4]

HOSPITAL ALEMÃO OSWALDO CRUZ; HOSPITAL ESTADUAL DE SAPOPEMBA; HOSPITAL DAS CLÍNICAS UNIVERSITY OF SAO PAULO; SAO PAULO STATE HEALTH DEPARTMENT, BRAZIL.

Introduction: Studies in Europe have shown higher consumption of antimicrobials in teaching hospitals, but there are no data on antibiotic use in Brazilian university hospitals. The objective was to evaluate the use of antibiotics in intensive care units (ICUs) of university hospitals. Methods: Data on antibiotic use and the proportion of multidrug-resistant organisms (MDRO) were obtained from Sao Paulo State Health Department. Antibiotics were grouped by class and expressed in defined daily doses (DDD) per 100 patient-days (pd), from 2009 to 2013. MDRO were grouped into resistant to 3rd generation cephalosporins, carbapenems, vancomycin and oxacillin and compared to carbapenems, polymyxins, oxazolidinone and glycopeptides use, respectively. Hospitals were grouped in teaching and non-teaching hospitals. Correlation between MDRO incidence and antibiotic use was investigated. Results: The use of antibiotics in teaching hospitals varied in a decreasing trend in the study period without statistical significance. Cephalosporin, carbapenems and glycopeptides were the most consumed classes with a mean of 4.26, 3.28 and 3.96 DDD / 100pd, respectively. Non-teaching hospitals had higher consumption of antimicrobials for all classes except polymyxins and oxazolidinones. Statistical difference in the proportion of MDRO was only observed in the group of resistant to carbapenems and oxacillin, being higher in teaching hospitals. Conclusions: These data presented demonstrate a significant difference in the use of antibiotics comparing hospitals according to academic affiliation, suggesting more adequate prescription in teaching hospitals.

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Study of low concentration and residual alcohol formulas on gram-negative bacterial growth pattern

AMAL HOSNY[1]; NAGWA KHAMIS[2]; GHADA ZIAD[3]; RANIA LABIB,[2]; AHMED TAHER,[3]

SPONSOR: CNPH; CHILDREN'S CANCER HOSPITAL 57357; CHILDREN'S CANCER HOSPITAL 57357CNPH

Introduction: Acinetobacter baumannii is a gram- variable rod, opportunistic organism that has emerged recently as an important cause of ventilator associated pneumonia, bacteremia and sepsis in patients with immunosuppression and critical illness. It is also gaining importance being resistant to available antibiotics. Recent work has highlighted its enhanced growth in the presence of ethyl alcohols, as alcohol based hand rub is used now extensively in the healthcare settings. Aim: It is a prospective study, aiming at putting into evidence low alcohol concentration could enhance the growth Acinetobacter baumanii, on some surfaces, at CCHE- 57357. Material and methods:
1 - Isolates have been collected from patient's samples over 6 month period.
2 - Acinetobacter and Ecoli spp (control) were selected among other gram – negative bacteria to be the subject of tested organisms versus low alcohol concentration.
3 - Isolates were tested versus serial dilution of the commercially available alcohol formula (70%, 35%, 17.5%, 8.75%, 4.37%, 2.18% and 1%).
4- Isolates were sub-cultured on Mac-Conkey agar media.
Results: A significant overgrowth of bacteria has been detected when using 1% diluted, commercially available hand rub solution on Mac-Conkey media. Conclusion and recommendations: The study has shown that Acinetobacter baumanii is able to overgrow in the presence of low concentration of alcohol, evidenced by the heavy growth encountered in subcultures. According to our study results, strict measures should be taken to prevent the abundance of low alcohol concentration specially over all upper surfaces in critical hospital departments.

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Review of bacterial contamination of mobile phones in hospitals in middle income countries

CAROLINA MALAVAZZI MALAVAZZI GALVÃO; JANEZ JANEZ,

METODO UNIVERSITY OF SAO PAULO, BRAZIL.

Introduction: The vast majority of studies correlating the role of cell phones in the transmission of bacteria in hospitals have been conducted in high income countries. Prevalence and type of bacteria, clinical hygiene standards and practices, and mobile phone usage patterns all may be distinct in middle income countries. Methods: Literature was obtained from the databases: U.S. National Library of Medicine from National Center for Biotechnology Information and Virtual Health Library from the Latin American and Caribbean Center on Health Sciences Information, using the terms: "mobile phone" and "contamination", on July 22nd 2016. A total of 1,107 mobile samples were analyzed. Results: The most common types of bacteria found on cell phones belong to the skin normal microbiota. The contamination rates ranged from 15%-98%, with an average of 69%. Conclusion: The degree of contamination of mobile phones is very similar to that encountered in high income countries (rates ranged from 10% - 100%, with an average of 69%), but there seems to be more pathogenic bacteria contamination in cell phones of professionals in middle income countries (the average contamination was 30,3%, being 11,6% in high income countries) and future research are necessary for further clarification. Keywords: infectious diseases, public health, cellular phones, contamination, pathogenic bacteria, hospital-acquired infection.

[283]
Epidemiology of infection control special interest agents isolated in surveillance cultures in a 16-month period in a pediatric healthcare hospital

MARIA HELENA CORRA SALUSTIANO

HOSPITAL INFANTIL JESER AMARANTE FARIA, STATE OF SANTA CATARINA, BRAZIL.

In a pediatric hospital with 150 beds, including 27 ICU beds , one of the instituted infection control measures is identifying epidemiologically important microorganisms through surveillance cultures, to avoid cross contamination. Surveillance cultures are performed for every patient proceeding from other healthcare services which stayed for more than 24 hours, and those who stayed less than 24 hours but were submitted to invasive procedure as central venous access, traqueal intubation, urinary catheterization or surgery. Contact precautions are instituted for those patients until the surveillance culture results, and beyond in case of isolation of any of the following: ESBL or KPC or metallobetalactamases producing organisms, MRSA , VRE, Burkholderia, Stenotrophomonas, Acinetobacter and Pseudomonas. Through 2016 January to 2017 March, 328 patients were admitted and had surveillance cultures requested. In 43 patients (13,1%) results were positive for one of the above listed organisms and patients were maintained in contact precautions until discharge from hospital. Patients who stays for more than 7 days in the ICUs, oncology unit, long stay-patients unit and under 1 year-old general unit, also has surveillance culture asked. In the same period, 153 patients were identified as colonized for one of above listed organisms, 103 in one of the ICUs. It´s noticed the importance of cross contamination in this health care setting, calling attention for the necessity of working the importance of adequate hand hygiene and using the contact precautions measures recommended by the infection control service.

[284]
Evolution of bacterial resistance in urinary tract infection isolates acquired in the community

JOSÉ RODRIGUES CARMO FILHO[1]; CHRISTIANO PATRÍCIO PÓVOA[1]; RODRIGO CARDOSO DA SILVA[2]; KAMILA CARDOSO DOS SANTOS[1]; MILCA SEVERINO PEREIRA[1]; ADENICIA CUSTÓDIA SILVA E SOUZA[1]

1.PONTIFICAL CATHOLIC UNIVERSITY OF GOIÁS; 2. FEDERAL UNIVERSITY OF GOIÁS, BRAZIL.

Introduction: Bacterial urinary tract infections of community origin in the elderly are frequent. Objectives: To evaluate the evolution of resistance of gram-negative bacteria from community urinary tract infection in the elderly. Method: Cross-sectional study, carried out in the municipality of Goiânia, Goiás, Brazil from 2011 to 2016, with the participation of four clinical laboratories. All positive uroculture reports with the respective antibiogram were considered. Only the first report of each patient was included in the analysis, unless reinfection occurred three months after the first. Results: A total of 3388 antibiograms were analyzed. The most frequently isolated microorganisms were successively E. coli (75.6%), K. pneumoniae, (16.6%) and Proteus spp. (5.7%). E. coli showed a high resistance rate for sulfonamide (40.5%), ciprofloxacin (35.0%) and increased resistance to 2nd Generation cephalosporins (p = 0.007). Higher resistance in K. pneumoniae were to sulfonamide (35.2%), Nitrofurantoin (37.9%), gemifloxacin (46.1%) and ofloxacin (46.1%) with Increase in resistance evolution to carbapenems (p = 0.03) and Cephalosporins of the first generation (p = 0.049). For Proteus spp., the highest resistance were to Gemifloxacin (46.11%), Ofloxacin (46.11%), Nitrofurantoin (76.68%) and Levofloxacin (81.87%). Enterobacter spp., Resistance to Gemifloxacin (42.9%), Ofloxacin (42.9%), Cephalosporins of 1st generation (44.3%) and Levofloxacin (77.1%), with evolution of resistance to Cephalosporins Generation (p = 0.0057). Conclusion: The microorganisms showed high resistance to multiple antimicrobial classes with increased resistance to 1st and 2nd generation cephalosporins. Aminoglycosides, Carbapenems and Monobactamic can be used as an option for the empirical treatment of community-acquired urinary tract infection in the elderly. Key words: bacterial resistance, evolution of resistance, urinary tract infection

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Are polish nursing students willing to become infection control nurses?

ANNA RÓŻAŃSKA; AGNIESZKA GNIADEK; ANNA SZCZYPTA; MAŁGORZATA BULANDA; JADWIGA WÓJKOWSKA MACH

JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE, POLAND

Introduction: An infection control nurse (ICN), as an occupation in Poland, officially appeared a bit over 15 years ago. Objective: The objective of this study was to poll nursing students on the appeal of being an ICN. Material and method: The research was carried out among 256 nursing students using the diagnostic poll method in the form of an original questionnaire. Results: Most of the respondents (98%) were women, part-time students (68.6%), people working in nursing (81.9%), but without specialization (77.4%). Median respondent age was 26 years, and median seniority in the profession was 10 years. The majority of the respondents (83.2%) declared that they would not like to take up a career in IC nursing. Their main justification was lack/limited contact with patients (76.7%) and heavy workload concerning administrative work (75.8%). People who declared their willingness to work as an ICN (14.8%) justified it mainly by career opportunities (81.6%), high place in the hospital organizational hierarchy of the hospital (78.9%), opportunities to cooperate with various professional groups (89.5%) and a wide variety of entitlements and the ability to make independent decisions (81%). The independent variables such as seniority in the profession and the knowledge gained during their studies significantly correlated (negatively) with the declaration of willingness to work as an ICN. Conclusions: The profession of ICN is not rather considered attractive in Poland, especially by people with longer work experience in nursing, and the system of (pre-) diploma training does not promote this specialization.

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Multiresistant microorganisms isolated in surveillance swab in HIV / AIDS patients at a hospital of infectology in Sao Paulo, Brazil

ADRIANA MARIA DA COSTA E SILVA, ANDRÉIA CRISTINE BUENO PEREIRA DENELUZ SCHUNCK, SAYONARA SCOTA, REGIA DAMOUS FONTENELE FEIJÓ, ROSANA RICHTMANN, NILTON JOSÉ FERNANDES CAVALCANTE

INSTITUTO DE INFECTOLOGIA EMILIO RIBAS, SÃO PAULO, BRAZIL

Introduction: In recent years, the incidence of multiresistant microorganisms has increased significantly, especially in high-risk populations such as patients in intensive care units and immunocompromised individuals. Infections caused by multiresistant microorganisms are associated with prolonged hospital stays, high costs, and increased morbidity and mortality (1-2). Objective: To verify the incidence of multiresistant bacteria (Enterococcus spp resistant to vancomycin, Acinetobacter baumannii and Klebsiella pneumoniae producing carbapenemase) in surveillance swabs in HIV / AIDS patients of a hospital of infectology of the State of São Paulo. Method: Retrospective study conducted from October 2016 to February 2017, in a hospital of infectious diseases in the State of São Paulo. The surveillance swab was collected weekly from all patients admitted to the intensive care unit. Results: In this period, 130 surveillance swab cultures collected from HIV / AIDS patients, with an incidence of 24.6% (32) were analyzed for multiresistant microorganisms. Sixty percent (2 cases) of Acinetobacter baumannii, 60.6% (20 cases) of Enterococcus spp resistant to vancomycin (VRE) and 33.3% (11 cases) of Klebsiella pneumoniae producing carbapenemase (KPC) were isolated. This study shows the importance of identifying these microorganisms for preventive measures to be implemented: colonized patients are placed in contact precautions, the hygienization of the environment is performed with 0.5% sodium hypochlorite, hygienization of the hands with chlorhexidine degermant and is Performed an audit by the hospital infection control service. Conclusion: Several factors are related to the persistence of these microorganisms within hospital units, such as individual vulnerability of patients, prolonged use of antimicrobials generating selective pressure, cross-transmission by colonized and / or infected patients, and the impact of adherence to prevention and control measures of infections. Th

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Incidence of hospital infections in HIV / AIDS patients at the intensive therapy unit of an institute of infectology of Sao Paulo, Brazil

ADRIANA MARIA DA COSTA E SILVA, ANDRÉIA CRISTINE BUENO PEREIRA DENELUZ SCHUNCK, SAYONARA SCOTA, REGIA DAMOUS FONTENELE FEIJÓ, ROSANA RICHTMANN, NILTON JOSÉ FERNANDES CAVALCANTE

INSTITUTO DE INFECTOLOGIA EMILIO RIBAS, SÃO PAULO, BRAZIL.

Introduction: Healthcare-associated infections (HAI) represents one of the main problems in the quality of healthcare due to an increase in hospitalization time, morbidity and mortality, as well as disorders caused by pain, malaise, isolation, and finally by patient suffering (1-3). Patients with HIV / AIDS are potentially a population at higher risk for acquisition of healthcare-associated infections when compared to other groups of hospitalized patients (4). Objective: To verify the incidence density of the infections related to healthcare in a hospital of infectious diseases of the State of São Paulo. Methodology: Descriptive, retrospective and quantitative study, whose objective was to analyze the occurrence of hospital infections in patients of the intensive care unit from January to December, 2016, in a reference hospital in infectology of the State of São Paulo. The criteria for the diagnosis of hospital infections were based on the recommendations of ANVISA and the Centers for Disease Control and Prevention (CDC). The HAI evaluated were primary laboratory bloodstream infection, pneumonia, infection related to central vascular access, and urinary tract infection. Results: 90 infections related to healthcare were verified between January and December 2016 in patients with HIV / AIDS. Of these infections, the incidence density ratio was 13.65 (41) of primary laboratory bloodstream infections; 19,96 (28) of pneumonia associated with mechanical ventilation; 2.00 (6) for pneumonia, 2.90 (7) for infection related to central vascular access and 1.72 (5) for urinary tract infection. The highest incidence density of healthcare-associated infections observed in the intensive care unit was pneumonia associated with mechanical ventilation, corroborating with the study by Romcy YM, 2009. Conclusion: The importance of approach and application of the Bundle of Prevention of Pneumonia Associated with Mechanical Ventilation, besides the early withdrawal of invasive devices

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Prevalence of *Clostridium difficile* in an oncological hospital of São Paulo, Brazil

ADRIANA COSTA COSTA E SILVA; JOSEANNE LIMA; PAULA VIDAL; BEATRIZ QUENTAL; JULIANA VIROLLI; IVAN FRANÇA E SILVA

HOSPITAL A. C. CAMARGO CANCER CENTER, SÃO PAULO, BRAZIL.

Introduction: Clostridium difficile is a Gram-positive bacillus sporulated anaerobic, associated with gastrointestinal infection, and may range from asymptomatic to severe diarrhea, pseudomembranous colitis, toxic megacolon, intestinal perforation and may lead to severe sepsis and death(1-3). Objective: To verify the prevalence of toxins A and B and PCR of Clostridium difficile in a cancer hospital in São Paulo. Method: Descriptive, retrospective and quantitative study, carried out at a cancer hospital in São Paulo, from January 2015 to December 2016. To investigate toxins A and B, the ELISA and the genexpert PCR were used. Results: In 2015, 723 samples were collected, 489 of toxins A and B and of 234 of PCR. In 2016, 233 samples of toxins A and B and 299 of PCR were collected. A total of 1255 samples were analyzed, being 722 of toxins A and B and 533 of PCR, all of hospital origin. The prevalence of positivity for Clostridium difficile in 2015 was 3.06% (15) of toxins A and B and 16.23% (38) of PCR. And in 2016 it was 4.29% (10) of toxins A and B and 15.38% (46) of PCR. The mean prevalence in this period was 3.46% (25) of toxins A and B and 15.75% (84) of PCR. Discussion: We observed that in both the year 2015 and 2016 there were more toxin A and B samples for C. difficile, but these results showed that we obtained a low positivity prevalence when compared to the PCR samples, the tests and immunoassay for Detection of toxin A and B antigens are rapid, have high specificity and exhibit moderate sensitivity. The real-time PCR technique is a method considered as an alternative standard because it has better sensitivity and specificity. In this hospital, a package of measures for the prevention of C. difficile was implemented, among them: a specific contact insulation plate for C. difficile, hygienization of the environment with 1% sodium hypochlorite, hand hygiene with chlorhexidine degermant, contact insulation in a private room and audit by the hospital infection

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Management of the control of hospital infection in a hospital of palliative care: indicators as mark

ANDREIA CRISTINE BUENO PEREIRA DENELUZ SCHUNCK; AMANDA JACQUE; SAMIR SALMAN

HOSPITAL PREMIER, SÃO PAULO, BRAZIL.

Introduction: Hospital infections are a major cause of morbidity and mortality in hospitals, as well as being responsible for an increase in hospitalization time and an increase in additional costs with the patient, becoming a public health problem. Objectives: To evaluate the infection rates of a hospital for palliative care and to verify the incidence of death related to hospital infection. Material and method: Retrospective, descriptive study with quantitative approach. The research was conducted in a private hospital in São Paulo, Brazil, from January 2015 to December 2016. Data collection was performed by the hospital infection control service and data analysis was performed according to the diagnostic criteria for infection related to the healthcare of the Long Stay or Psychiatric Hospital Manual of the State Health Department of Health of São Paulo 2016. The healthcare-related infections evaluated in this service were: urinary tract infection, pneumonia, gastrointestinal infection and infection integumentary. Results: In 2015 the incidence densities were 3.27 for urinary tract infection, 1.84 for pneumonia, 0.16 for gastrointestinal infection and 0.57 for integument per 1000 day-patients and in 2016 were 3.07 of urinary tract infection, 1.10 pneumonia, 0.20 gastrointestinal infection, and 0.63 tegumentary infection per 1000 patient-days. The overall infection incidence was 5.85 in 2015 and 4.99 in 2016 of infections per 1000 patient-days. The incidence of death in 2015 was 0.61 and in 2016, 0.23 deaths per 1000 patient-days. Discussion: The results found in this hospital corroborated with the international data of long stay institutions. In the United States, the incidence of global infection ranges from 1.8 to 13.5 infections per 1000 patient-days and the incidence of death 0.04 to 0.71 per 1000 patient-days. Conclusion: This research shows the importance of a hospital infection control service within a hospital of care for infection control, including su

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The profile of antimicrobial use in an universitary hospital's intensive care unit

EDRIÉLISSON JALES DE OLIVEIRA; DANILO BRITO DE QUEIROZ CARDOSO; VICTOR FELIPE DE ANDRADE MATO; JOÃO MARCOS MARCOS CAVALLIERI ALVIM; MARISE REIS DE FREITAS

DEPARTAMENTO DE INFECTOLOGIA UNIVERSIDADE FEDERAL DO RIO GRANDE DO NORTE, BRAZIL.

Introduction: The bacterial resistance is a world's public health problem. Understand the antimicrobial's usage profile is essential to an antimicrobial stewardship program. Objective: Analyze the ICU's antimicrobial consumption pattern of the Hospital Universitário Onofre Lopes, from January 2006 to December 2015. Methods: Descriptive and retrospective study. The antimicrobial consumption was measured in defined daily dose/100 beds/day, obtained from data provided by the hospital information sector. Results: The UTI consumes 60% of the antimicrobials used in the hospital, with an average of 154,7 DDD/100 beds/day, being more frequent: Cefepime (40,5 DDD/100 beds/day), Meropenem (27,0 DDD/100 beds/day), Oxacillin (24,6 DDD/100 beds/day) and Ceftriaxone (13,8 DDD/100 beds/day), among the 29 analyzed antimicrobials. In this last decade, there was a significantly decrease ($p<0,05$) in the consumption of the antimicrobials Oxacillin, Cefepime, Ceftriaxone, Ciprofloxacin and Clindamycin, and an increase ($p>0,05$) of the Meropenem, Polymyxin B and Amikacin uses. The higher consumption of these drugs is related with the prevalence of Multiresistant gram negative bacteria, according to data from HICS (Hospital Infection Control Service) from July to December of 2013. In this period, the most isolated bacteria in blood culture were Staphylococcus aureus (19%) and coagulase-negative Staphylococcus (19%), Klebsiella spp. (16%) and Acinetobacter spp. (13%), of which 60% of Acinetobacter spp. strains were resistant to Meropenem, 60% to Cefepime and 80% to Ceftriaxone. Among the Klebsiella spp., 69% were resistant to Cefepime and 87% to Ceftriaxone. Conclusion: The establishment of antimicrobial stewardship program is necessary to control the crescent multiresistant bacteria in the ICU.

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Strategy for screening patients colonized by carbapenemase-producing bacteria (kpc)

ALINE MASSAROLI; RAFAEL OSELLAME, MAIARA FLORES

UNIVERSIDADE FEDERAL DA FRONTEIRA SUL, CHAPECÓ, STATE OF SANTA CATERINA, BRAZIL.

Objective: To analyze the assertiveness of the surveillance culture protocol to identify patients colonized by carbapenemase - producing bacteria (KPC) implemented in a medium size hospital with high complexity in 2016. Interventions: Patients admitted to the hospital are screened according to the criteria established by the KPC surveillance culture protocol: transfer from another institution with a stay longer than 24 hours or presence of an invasive device; to be institutionalized or have been hospitalized in the last three months for more than 48 hours. If the patient meets any of these criteria, a rectal swab is collected to perform the culture and the permanent patient in contact precaution the end result of the culture. Results: In 2016, 523 patients entered the surveillance culture protocol for KPC, and fifteen patients presented positive results for colonization by carbapenemase-producing bacteria. Of these, 8 patients were transferred from another hospital and 7 patients had previous hospitalizations at our institution for cancer treatment or with multiple comorbidities. Analyzing the assertiveness of the protocol, the value of 2.9%. The protocol's criteria are: transfer of another hospital 6.4%, institutionalized patient 20%, and hospitalization for more than 48 hours in the last three months 1.7%. Conclusions: The data indicate the need for adjustment in the criteria of the current protocol, seeking to increase the level of assertiveness especially the last criterion, so that we can optimize the resources used in the actions of infection prevention and control.

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Infection rate in home hospitalization service

LOIANE MORAES RIBEIRO; SAMANA VIEIRA; CINTIA PEREIRA; SHEILA SIAO SILVEIRA LOPES; MARIA ELÍZIA PARREIRA

CAPTAMED CUIDADOS CONTINUADOS, BELO HORIZONTE, STATE OF MINAS GERAIS, BRAZIL.

Introduction: The growth of home care services brings with it issues such as the circulation of health professionals between the home and hospital settings, and the use of invasive devices in the home environment. The knowledge of the prevalence of infections acquired in a home hospitalization program and their respective topographies is fundamental for the decision making of preventive and therapeutic actions. Objective: To describe the prevalence of infections among patients in the home hospitalization program of a private company head office in Belo Horizonte - MG and a branch office in other states of the Brazil. Methodology: Captamed's infection prevention and adverse event prevention team (PCPIEA) is responsible for monthly monitoring of infections among patients assisted in all forms of care offered. Of the patients assisted in the home hospitalization modality, by the Goiânia-GO branch, from March 2016 to February 2017, those who presented a diagnosis of infection were evaluated. Results: Of the total 1088 visits occurred in the period (1 visit corresponds to 1 patient attended in 1 month), 159 infections were identified (average rate of 14.71% per month), distributed in the following topographies: 74 (46.5%) of the urinary tract infections, 58 respiratory tract infections (36.5%), 14 eye, ear, nose and throat infections (8.8%), 11 skin or soft tissue infections (7%) and 2 gastrointestinal tract infections (1.2%). Conclusion: Data presented demonstrate the importance of systematic surveillance and control measures of infection indicators associated with home care services. Key words: home care, infection.

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Surgical site infections in pediatrics: a systematic review

ANDRÉ RICARDO RICARDO ARAUJO DA SILVA; PAULO HENRIQUE RODRIGUEZ LARA; FILIPPE PIRRONE CUNHA; BARBARA GOMES ALVES GUIMARÃES; NICHOLLAS CAFIEIRO DE CASTRO PEIXOTO

FACULTY OF MEDICINE´S STUDENTS - FEDERAL FLUMINENSE UNIVERSITY, NITERÓI, BRAZIL; 5 COORDINATOR OF TEACHING LABORATORY OF PREVENTION AND CONTROL OF HEALTHCARE-ASSOCIATED INFECTIONS FEDERAL FLUMINENSE UNIVERSITY, NITERÓI, BRAZIL

Introduction: Surgical site infections (SSI) occur after surgical incisions, with the potential to impact on other tissues and organs. Several guidelines describe measures and interventions necessary to prevent SSI, but usually these recommendations come from adult studies and exclude children. Objective: Identify which interventions are effective in reducing rates of SSI, in the pediatric population submitted to clean surgeries. Methodology: We conducted a systematic review in neonates and children (from zero to 18 years old) using the term "clean surgery and surgical site infection prevention". The period studied was 1996 to 2017 and the search was done in five databases: PUBMED, SCIELO, LILACS, Cochrane Database and DOAJ. Reviews, letters, notes, conference abstracts and opinion articles were excluded as well interventions in outpatients care. Results: We found 139 articles in the initial search and 16 of them were included in the final analysis: 1 from LILACS, 4 from Cochrane and 11 from PUBMED. Among the studies included, 6 articles compared using or not antibiotics as prophylaxis for SSI, 2 compared different prophylaxis treatments, 2 studied adherence to local protocols and guidelines, 2 studied use of dressings for prophylaxis, 1 studied preparation of the skin, 1 studied timing of antibiotic prophylaxis, 1 studied preparation of sutures impregnated with triclosan and 1 analyzed use povidine-iodine drops for prophylaxis in strabismus surgeries. Conclusion: Most interventions for SSI prophylaxis in children are based on using or not antibiotics, protocols, duration and different schemes. No article about hand washing was included.

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Occupational risks and use of personal protective equipment for tuberculosis prevention: integrative

CONCEIÇO MOTA XAVIER MARINS; LARISSA VALENTE RODRIGUES; MIRIAM MARINHO CHRIZOSTIMO; ELIANE DA CONCEIÇÃO GOMES

FEDERAL FLUMINENSE UNIVERSITY, NITERÓI, BRAZIL.

Introduction: Tuberculosis (TB) still challenges the advances of science and remains a prominent cause of morbidity and mortality in Brazil. There is a higher risk of illness among vulnerable populations, among the health professionals. The dissemination of TB information to health professionals is necessary for the prevention of this disease. Objective: To analyze scientific productions that discuss occupational risk and use of personal protection equipment (PPE) for the prevention of TB. Method: Exploratory, descriptive and qualitative research. Integrative literature review, in the period between 2008 and 2013, using the keywords: occupational risks, tuberculosis, health personnel and personal protective equipment. Results: The analysis of the six scientific productions selected for this study made it possible to elaborate two categories: TB is a real occupational risk for health professionals and its prevention is related to the use of PPE. The adoption of biosafety norms in health work is a fundamental condition to guarantee the safety of workers, whatever their area of action, because risks are always present. Conclusion: These categories indicate that there is concern about the transmission of TB in health workers, however, it is necessary to emphasize the prevention of this disease. They also show that there is difficulty in adherence to the use of PPE. Studies are needed to discuss and evaluate the use of PPE in TB prevention.

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Antimicrobial stewardship in a school hospital

MARCELO CARNEIRO; FERNANDA BRANDÃO; RAFAELA K. DA ROCHA, CAUANA F EFEL;
PAULA BIBIANA NUNES; MARCELO C. MAFFI,

UNIVERSITIY OF SANTA CRUZ DO SUL, BRAZIL.

Introduction: Inappropriate use of antimicrobials may lead to therapeutic failure and the emergence of bacterial resistance. It is essential to break the barriers of medical unpreparation for prescription, requiring an education program for the control of antimicrobials. This work aims to evaluate the prescription profile of antibiotics for adult in a school hospital. A prospective cohort study was held from June to August 2016. The antimicrobial prescriptions were compared of the private (PVT) and non-private (NPVT) adult units of the Hospital Santa Cruz, Santa Cruz do Sul, RS, Brazil. Sampling was composed of 167 patients who used antimicrobials during the study, of which 110 from the n-pvt ward. The mean age was 60.7 years and 56.3% men. Most patients were in non-critical unit, with low comorbidity (Charlson Comorbidity Index ≤2), clinical admission (50.9%) and antibiotic therapy (63%). The most frequent comorbidity was cardiological (51.5%) and the infectious focus was the respiratory tract (25.8%). The indication of intensive care unit was on average 18.6%, mostly due to sepsis. The antimicrobials prescription in relation of the class and intravenous administration route was similar between the wards, β-lactam being the most prescribed (59.2% NPVT vs 57.7% PVT), the most chosen cephalosporins. The quinolones were the second one (16.7% NPVT vs. 21.8% PVT). Carbapenems and glycopeptides prescription was performed in each of these classes in 2.9%. Adjusting the prescription according to creatinine and cultures occurred in 2.4% and 4.2%, respectively. Replacement for oral treatment occurred in 6.6% (which 7 in PVT and 4 in NPVT). The hospital death was 10.9% in the NPVT and 14% in the PVT ward. Antimicrobials prescription is compatible with a hospital that has low bacterial resistance. There was no difference in prescription between the analyzed wards, showing an alignment between the medical staff and the guidelines for hospital infection control. It is important a continuation

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Incidence of infections in orthopedic surgery in a hospital in a Brazilian city in the countryside

MARCELO CARNEIRO; PEDRO ANDRÉ KARKOW BLOS; FERNANDO AUGUSTO MARION SPENGLER; ELIANE CARLOSSO KRUMMENAUER; THIAGO HENRIQUE GEWEHR HOFF; LIA GONÇALVES POSSUELO; JANE DAGMAR POLLO RENNER; JANETE APARECIDA ALVES MACHADO, KELLY LUISA KONFLANZ

UNIVERSITY OF SANTA CRUZ DO SUL, BRAZIL.

Introduction: Even though knee and hip replacement complications are rare, infections, exacerbations of an underlying illness and death are still worrisome. Accessing the mortality and infection rates of these procedures is of great importance, as a way to evaluate the quality of the service. Therefore, the objective of the present study is to evaluate the incidence of infections and mortality in orthopedic surgery in a reference center. Methodology: This is a retrospective, descriptive study, to analyze knee and hip replacement surgeries performed in a school hospital within the period of January of 2014 to June of 2015.The data was collected by analyzing electronic medical records. The exclusion criteria were: unavailable or incomplete medical records and revision arthroplasty. The studied variables were: gender, age, time between hospitalization and surgery and discharge, need of ICU and kind of procedure (total hip arthroplasty (HA) or total knee arthroplasty (KA)).A database was created, and the variables were analyzed by descriptive statistic. Results: 295 patients were selected, 110 (37,5%) were male and 185 (62,8%) female. The average age was 71,1 years old. HA was the leading procedure, with 204 (69,3%) operation, followed by TKA, with 87 (29,4%) surgeries and 4 (1,3%) patients this data could not be obtained. 286 (97%) patients were discharged, 3 (1%) were transferred to another center and 6 (2%) died while hospitalized. 10 (3,3%) patients needed an ICU, and, of those, 4 died. Revision surgery was necessary in 14 (4,7%) patients, and 4 (1,3%) were due to infection. Conclusion: The mortality of hip and knee replacement, although small, is still significant, especially with the rise of this procedure. In this study, we found infection and mortality rates a bit higher than the ones in other studies. Therefore, it is necessary to reduce pre-operative hospital stay and increase knowledge on the indications of the revising

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Extensively-resistant bacteria on manual resuscitators in successive use in the same patient

GISELLE PINHEIRO LIMA AIRES GOMES; ADENÍCIA CUSTÓDIA SILVA E SOUZA; LARA STEFÂNIA NETTO DE OLIVEIRA LEÃO VASCONCELOS; DAYANE COSTA, SERGIANE BISINOTO ALVES, HELINY CARNEIRO CUNHA NEVES; MILCA SEVERINO PEREIRA

SCHOOL OF SOCIAL AND HEALTH SCIENCES, PONTIFICAL CATHOLIC UNIVERSITY OF GOIAS, BRAZIL.

Introduction: Although manual resuscitator (MR) does not have direct contact with the lower respiratory tract, it can lead inside existing content to the patient`s lower respiratory tract. Aim: To determine the bacterial load on MR after successive use in the same patient and determine their antimicrobial susceptibility profile. Methods: Samples of 30 MR connector from intensive care units of a Brazilian hospital were collected at time zero, 24 and 48 hours in use in the same patient. Samples were collected through saline moistened swab. Mannitol salt agar and MacConkey agar were used for microorganism culture. Bacterial identification and antimicrobial susceptibility testing were performed by automated method. Results: Twenty MR (72.4%) were contaminated. Different bacteria isolated at zero, 24 and 48 hours of use were six, 17, and 31, respectively, wherein 14 were contaminated by two or more bacterial species. All Staphylococcus aureus were methicillin and macrolide-lincosamide-streptogramin B (constitutive) resistant. A vancomycin and teicoplanin-resistant MRSA was also isolated. Among Gram-negative bacteria, Acinetobacter baumannii (36.1%), Serratia marcescens (22.2%), and Pseudomonas aeruginosa (19.4%) were predominated. Tigecycline intermediate resistance was detected to 76.9% of Acinetobacter baumannii, and 7.7% was colistin-resistant. Eleven Enterobacteriaceae (85.7%) showed concomitant resistance to 3rd generation cephalosporins and carbapenems. Conclusions: Multi and extensively-drug resistant bacteria were detected, and as longer using time as greater the number of MR contaminated, and bacterial species isolated. These results point to failures in the processing of MR, and the need for frequent replacement of MR due the risk of (re)colonization/infection of the respiratory tract.

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Evaluation of effectiveness of disposable technology for bed bath: a randomized clinical trial

DÉBORA CRISTINA CRISTINA PAULELA[1]; SILVIA CRISTINA MANGINI BOCCHI[2]; ALESSANDRO LIA MONDELLI[3]

BOTUCATU MEDICAL SCHOOL, UNIVERSITY ESTADUAL PAULISTA UNESP, SAO PAULO; DEPARTMENT OF NURSING, BOTUCATU MEDICAL SCHOOL, UNIV ESTADUAL PAULISTA UNESP; BOTUCATU MEDICAL SCHOOL, UNIV ESTADUAL PAULISTA UNESP. BOTUCATU, SÃO PAULO STATE BRAZIL.

Introduction: Bed bath® is a routine procedure performed by the nursing team to meet hygiene and comfort needs of hospitalized patient. It is presumed the conventional technique that uses buckets, basins, water, soap, gloves and compresses, contributes to the dissemination of microorganisms in hospital environment. The technology of disposable bed bath proposes to prevent contamination of corporal area with microorganisms coming from another one and cross contamination. The product consists of a wrapping containing eight pre-humid compresses with water, surfactants, vitamin E, dexpanthenol, preservatives and fragrances, one for each area of the body. Goals: To evaluate the effectiveness of conventional and disposable bed baths on microbial load of skin of hospitalized and bedridden patients. Methods: Parallel clinical trial, conducted at the Stroke Unit of the Public Hospital of the State of São Paulo, with 40 bedridden patients randomized in: intervention group (disposable bed bath) and control group (conventional bed bath®). The evolution of microbial load of skin cultures, collected from right lower limb popliteal fossa, was analyzed before first and after fifth baths. Results: The microbial load of intervention group reduced, 90% of participants presented skin protected from bacterial colonization. In control group, 80% of participants had positive cultures (p <0.001). Conclusions: The effectiveness of the technology evaluated in prevention and control of dissemination of microorganisms was confirmed. Low effectiveness of conventional bed bath signaled to nursing the need to review the procedure. This research confers scientific evidence, for safe choice of bath mode in hospital bed.

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Death and hospitalization time correlation for patients diagnoses with surgical site infection

BRUNA CRISTINA CRISTINA VELOZO; RODRIGO AUGUSTO PERES AUGUSTO PERES VELOZO; MARLA ANDRÉIA GARCIA DE AVILA; ERIKA APARECIDA TORRES; ALESSANDRO LIA MONDELLI

BOTUCATU MEDICAL SCHOOL - SAO PAULO STATE UNIVERSITY (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction: Surgical site infection (SSI) is one of the most prevalent postoperative complications with an expected incidence of 2,8 to 20% depending on the surveillance, patient characteristics and surgical procedure. The aim of this study was to analyze the deaths and hospitalization time correlation with the diagnosis of surgical site infection. Method: Cohort study that evaluated adult patients 30 days after surgical procedure in 2015, through surgical site surveillance of the teaching Hospital Infection Commission in the countryside of São Paulo, Brazil. Results: Of the 39 patients diagnosed with surgical site infection, 4(10.2%) died. There was a significant association between surgical site infection and hospitalization and a higher death rate of p = 0,016. A statistical significance of p <0,001 was verified for the correlation of hospitalization time and patients diagnosed with surgical site infection even at hospitalization, that is, there was a longer hospitalization time (18 days) for patients with this infection. The surgical site infection corresponds to 37% of the infections that occurred in surgical patients, being an important cause of prolonged hospitalization and morbidity. Thus, in our study, there was an important correlation between patients with this infection and longer hospitalization than patients without such diagnosis. The death rate for patients in our sample was higher than 3% expected in the literature. Conclusion: Surgical site infection was associated with a high death rate and resulting longer hospital stay.

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Needleless connector protects hubs from internal bacterial colonization

ANDREA GUYOT; FRANK HÜNGER; MELTEM NALATO

Introduction: Conventional hubs are not easy to disinfect before injections, whereas the membrane of needleless connectors can be effectively disinfected. Stopcocks have been developed, which have a needleless connector attached and also an automatic flush function. Weekly blood cultures through hubs demonstrated internal colonization in 21 of 31 of haemodialysis catheters, which lead to bacteraemias in 11 patients with the same bacteria from the hub (Dittmer 1999). Aims: This field trial will compare the internal colonization rate of conventional stopcocks (Discofix C®, Braun) with a novel stopcock with attached connector and automatic flush function (NanoKlave®, ICU Medical). Methods: From January to February 2015, 53 patients on our cardiothoracic ICU had a conventional stop cock and 23 patients a NanoKlave® inserted at their central venous catheter. The stopcocks were changed every 3 days and were used for injections and short infusions after disinfection with Octenidindalcohol (Octeniderm®, Schülke). After use the stopcocks were removed aseptically and sent to the microbiology laboratory. The stopcocks were flushed with 500 ul sterile saline and the fluid dispersed on a Columbia blood agar (Oxoid). The number of colonies was counted and identified by Maldi TOF (Bruker). Nineteen of 53 conventional stopcocks (36%) yielded growth of skin flora (coagulase negative staphylococcus =CNS, Micrococcus and Enterococcus faecium), whereas only 3 of 23 (13%) NanoKlave grew CNS or Micrococcus. ($p < 0.05$). Conclusion: The NanoKlave® stopcock reduced significantly the internal colonization rate of stopcocks.

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Profile of patients diagnosed with surgical site infection

BRUNA CRISTINA CRISTINA VELOZO; MARLA ANDRÉIA DE AVILA; RODRIGO AUGUSTO PERES VELOZO; ERIKA APARECIDA TORRES; ALESSANDRO LIA MONDELLI

BOTUCATU MEDICAL SCHOOL - SÃO PAULO STATE UNIVERSITY (UNESP). BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction: Surgical site infection (SSI) usually occurs within 30 days after surgery, where there is a higher risk of this infection in contaminated or infected surgeries, lasting more than 2 hours and in patients with previous comorbidities. Aim: To verify the profile of patients diagnosed with surgical site infection. Method: Cohort study performed at a teaching hospital in the countryside of the state of São Paulo, Brazil, in 2015. It included patients aged ≥ 18 years who underwent a surgical procedure and were evaluated for the occurrence of SSI after 30 days of surgery. Results: 415 patients were elected for research, which 39 (9.4%) had SSI, where 5.8% were identified by post-discharge surveillance, corroborating a study in Pará, Brazil. The highest cases of SSI were registered in gastrointestinal surgeries (26%), which refers to the potential of contamination in evidence. 53.8% of surgeries were potentially contaminated. In addition, 77% of the surgeries were elective and 67% had a duration of more than 2 hours. Patients were mainly male (54%), elderly (56%) and 61.5% were classified as ASA (American Society of Anesthesiology) classification 2 (moderate systemic disease). The mortality rate was 10.2%, which by the literature, a rate of 5-10% in major surgeries is expected. Conclusion: SSIs occurred in 9.4% of the studied patients and were prevalent in gastrointestinal surgeries lasting more than 2 hours in the elderly and for those with previous comorbidities.

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Factors related to the interruption of antiretroviral therapy for people living with HIV/AIDS – BRAZIL

JULIANO SOUZA CALIARI[1]; GISELLE JULIANA[2]; MARIA CRISTINA CRUZ[2]; NATÁLIA PEREIRA[2]; CAROLINA CASTRIGHINIB[2]; RENATA REIS[2]; ELUCIR GIR[2]

FEDERAL INSTITUTE OF SUL DE MINAS, BRAZIL; ESCOLA DE ENFERMAGEM DE RIBEIRÃO PRETO, BRAZIL.

Introduction: Antiretroviral enabled increased survival, decreased hospitalizations and complications associated with the disease; yet even the treatment being free and positively impacting the individual's quality of life, we observe persistent cases of non-compliance. Objectives: To identify and analyze the variables which were associated with stoppage of antiretroviral therapy for people living with HIV/AIDS. Methods: Transversal study ran in 2014 and 2015 with the users of a specialized clinic for PLWHA. Individuals older than 18 years old were invited. The gathering was carried out through individual interviews. The data were organized in Excel 2010 and processed in SPSS 23.0. We used the chi-square test, adopting l significance level of $p < 0.05$. All ethical aspects were contemplated. Results: The study included 258 users of which 29.5% had already stopped the use of ART. The association of these variables with the interruption of antiretroviral therapy was statistically significant with age ($p = 0.001$), education ($p = 0.038$), practicing religion ($p = 0.002$), living with a relative with HIV ($p = 0.039$), CD4count ($p = 0.000$), viral load ($p = 0,000$), adverse events ($p = 0.000$), assistance in activities of daily living ($p = 0.006$) and drug use ($p = 0.002$). Conclusions: Despite hasn't been prevalent, the profile of users who stopped treatment were 20-39 years old, 0-5 years of schooling, evangelical, without contact with a relative with HIV, with CD4 above 350 cells per mm³/blood, detectable viral load, which didn't have adverse effects, didn't require assistance to activities of daily life and didn't use drugs.

[311]
Evaluation of antimicrobial prophylaxis and surveillance of surgical site infection: cohort study

BRUNA CRISTINA CRISTINA VELOZO; ERIKA APARECIDA TORRES; MARLA ANDRÉIA GARCIA DE AVILA; ALESSANDRO LIA MONDELLI

BOTUCATU MEDICAL SCHOOL - SÃO PAULO STATE UNIVERSITY (UNESP), BOTUCATU, SÃO PAULO STATE, BRAZIL.

Introduction: Surgical site infection is the most frequent complication in surgical patients and its incidence can be reduced with adequate antimicrobial prophylaxis. This study proposed to evaluate the use of antimicrobial prophylaxis and the outcome of this infection. Method: A 30-day follow-up cohort study conducted in 2015 in the countryside of São Paulo, Brazil. Patients over 18 years old who underwent surgeries of all surgical specialties that received antimicrobial prophylaxis were elected, in the exception of those with the use of artificial prostheses. The data was collected through a software developed to compare the antimicrobial prophylaxis performed in the surgery with the hospital protocol. Results: The sample consisted of 415 patients and compliance with all the evaluated items was 1,7%. The highest inadequacy (95.8%) was regarded to the additional antimicrobial doses applied during the surgery whenever it's necessary. We verified that for each inadequacy of non-intraoperative antimicrobial prophylaxis, the odds ratio for surgical site infection increased by 60% and 39% for the patients who received the antimicrobial in the postoperative period. Our study corroborates to both Brazilian studies and other developing countries studies in the general evaluation of antimicrobial prophylaxis. Conclusion: It is necessary to provide feedback to surgical specialists about the mistakes found, so that there is greater adherence to the institutional protocol and improvement to process. Inadequate use of antimicrobial prophylaxis significantly increased the odds ratio of infection, demonstrating its relevance.

[312]
Ventilator-associated pneumonia and the importance of oral hygiene quality

FILIPE PIASTRELLI; MIRELLA ALVES CUNHA; WILMA MARQUES MARQUES SILVA; ANAESTELA MORALES VILHA TOLEDO; JULIANA GABRIELA GABRIELA FERNANDEZ, DEYSE ALVES BOTELHO BONONI

HOSPITAL ESTADUAL DE SAPOPEMBA, SÃO PAULO STATE, BRAZIL.

Introduction: Nosocomial pneumonia has correlated to dental plaque and oropharynx colonization in patients receiving mechanical ventilation. The interruption of this process, by preventing colonization of pathogenic bacteria, represents a potential procedure for the prevention of ventilator-associated pneumonia (VAP). Methods: This is a retrospective study, comparing changing in oral hygiene (chlorhexidine 0.12%) institutional protocol validation and the incidence of VAP. During 12 month, was applied a new oral hygiene effectiveness evaluation, which included a qualitative analysis by the physiotherapist and nursing team. This period was compared to 12 anterior months, which one the effectiveness analysis was performed only by checking the chlorhexidine administration (presence or absence). Results: The incidence of VAP in the pre-intervention period was 8.5/1.000 ventilator-day(VD). In the post-intervention period, this incidence falls to 4.5/1.000 VD. Besides, there was a qualitative perception of oral hygiene improvement in the patients using mechanical ventilation by staff. Conclusions: It has been demonstrated a reduction of VAP incidence after the application of an effectiveness evaluation oral hygiene protocol. Although it is not possible to establish a causal relationship, it is possible that this changing could influence on this result.

[313]
Quality of elderly living with HIV / Aids in ambulatory treatment

JULIANO SOUZA CALIARI[1]; LILIAN REINATO[2]; DAIANA PIO[2]; LETÍCIA LOPES[2]; RENATA REIS[2]; ELUCIR GIR[2]

FEDERAL INSTITUTE OF SUL DE MINAS, BRAZIL; ESCOLA DE ENFERMAGEM DE RIBEIRÃO PRETO, BRAZIL.

Introduction: The chronicity of AIDS was a milestone for improving people's living conditions. Increased diagnostic time allows infected individuals greater chance of acceptance, adaptation and conformation, and thus establish affective and sexual relationships and even improve adherence to treatment. Objective: To analyze factors related to the quality of life of elderly people living with HIV / AIDS. Methodology: A cross-sectional study carried out in an outpatient clinic specialized in the care of people living with HIV / AIDS. Participants were selected in 2014 and 2015. Data collection was by means of an individual interview, guided by a questionnaire covering sociodemographic and clinical variables, and HAT-QoL Questionnaire. For data analysis and sample characterization, descriptive statistics were used, with simple frequency, measures of central tendency and variability. The Shapiro-Wilk test was used to evaluate the normality of the distributions, considering significance $p > 0.005$, and the Mann-Whitney and Kruskal-Wallis tests were applied to analyze the difference between the means of the domains. The project met the ethical requirements. Results: Of the total of 338 registered users in the service, 81 met the inclusion criteria, of which 31 (38.3%) contracted HIV after 50 years. According to sociodemographic variables, 58 (71.6%) were male; 37 (45.7%) had one to five full years of schooling; 56 (69.1%) are said to be married or to live together; 55 (67.9%) reported having children; 43 (53.1%) received more than one minimum wage per month; 46 (56.8%) reported being retired or retired; 60 (74.1%) were accompanied and 60 (74.1%) mentioned that they were practicing religion. They were statistically significant with quality of life: sex, children, occupation, religion, time of diagnosis, exposure to HIV, adverse effects, treatment interruption, viral load count, hospitalization, dependence for daily activities and drug use.

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Microbiology and length of antibiotic therapy of pneumonia in intensive care units, depending on method of microbiological diagnostic

MICHAŁ WAŁASZEK[1]; ANNA RÓŻAŃSKA[2]; MARTA WAŁASZEK[3]; MAŁGORZATA BULANDA[2]; JADWIGA WÓJKOWSKA-MACH[2]

POLISH SOCIETY OF HOSPITAL INFECTIONS; JAGIELLONIAN UNIVERSITY MEDICAL COLLEGE; ST. LUKE HOSPITAL IN TARNOW, POLAND.

Introduction: The aim of the study was to analyze microbiology and length of antibiotics therapy in case of pneumonia in intensive care units (ICUs) in Polish hospitals, depending on diagnostic method used for confirmation. Material and method: Data from seven ICUs participated in the Program of Infections Registration run by Polish Society of Hospital Infections, based on ECDC recommendations, were used in this study. Between 1.01.2013 and 31.12.2015, 2 547 patients were hospitalized in study ICUs. Results: Total number of 205 PN cases detected in the study population accounted for 8% of all infections in the ICUs, and the average incidence density rate was 10.2/1000. In the whole study period, less than half of all PN cases (80, i.e. 39%) was confirmed by invasive diagnostic sample with semi-quantitative culture (PN1). However, detailed analysis of the type of microbiological diagnostics showed that the proportion of PN1 increased from 10% in 2013 to 64% in 2015. In 32.6% of PN cases Gram-negative rods from Enterobacteriaceae were isolated, then, in 27.6% non - fermenting Gram-negative bacteria and in 19.3% Gram - positive cocci. Statistically significant correlation was found between the average length of antibiotics therapy and the method of microbiological diagnostics used for confirmation of PN – 7.2 days in case of PN1 comparing to 9.00, 8.25 and 9.71 in case of PN2, PN3 and PN4, respectively. Conclusions: Trend of increasing number of PN1 was observed in study units. The method of confirmation of etiological factors correlated with the length of antibiotic treatment.

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The actions of nurses in antisepsis as prevention of nosocomial infection: integrative review

LARISSA RODRIGUES VALENTE

FEDERAL FLUMINENSE UNIVERSITY (UFF), NITERÓI (RJ), BRAZIL.

Introduction: Nursing has the essence of caring, which entails the direct contact of the nurse with the patient. Thus, issues related to the prevention of hospital infections are part of their everyday life. The actions of the nurse in antisepsis are essential to the prevention and control of hospital infection. Objectives: To analyze the existing scientific productions in the database that address the nurse's role in the prevention of nosocomial infection which relate to antisepsis. Methodology: This is an exploratory, descriptive, and qualitative study, which the integrative review used the descriptors: nursing, antisepsis and cross infection in the Virtual Health Library, with time frame of ten years. Results: After the employment of inclusion and exclusion criteria, two articles - one from SciELO and other from LILACS - were selected. The discussion was organized into four categories: lag in theoretical and legal knowledge by nursing professionals; different professional categories manipulate the antiseptic solutions and the implications thereof; the need to create protocols for the use of antiseptic solutions; and the nurse's role as manager. Conclusion: Antisepsis and nurse are slightly related topics, a fact evidenced by the lack of publications. The actions of nurses in antisepsis are managerial and involves, therefore, the administration of antiseptic solutions, requiring that institutional protocols and continuing education programs to be created so nursing professionals update their knowledge.

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Risk factors associated to infection by *Klebsiella pneumoniae* carbapenemase (kpc) enzyme in enterobacteria

ANDRE LUIZ SILVA ALVIM; ANDREA GAZZINELLI; BRAULIO ROBERTO GONCALVES MARINHO

UNIVERSIDADE FEDERAL DE MINAS GERAIS (UFMG), MINAS GERAIS, BRAZIL.

Introduction: KPC-producing enterobacteria spread rapidly and, by limiting the therapeutic options for infected patients, end up being associated with a high mortality rate. Aim: to evaluate the epidemiological and microbiological factors associated with KPC enterobacterial infection in the hospital environment. Methodology: a case-control study conducted in a private hospital in Belo Horizonte that used 41 cases and 82 controls, totaling 123 patients diagnosed with KPC and who had genotypic confirmation by the Central Laboratory of Public Health - LACEN / MG. The data were collected in the Automated System of Hospital Infection Control (SACIH). The project was approved by the Ethics Committee (CAAE: 60621616.8.3001.5126). Statistical analysis was performed by $X2$ test and logistic regression. Results: The mean age of the patients was 72 years, most of whom were male (65.8%), white (65%) and medium (46.3%). The following factors were considered as risk factors for KPC infection: previous colonization by enterobacteria (OR: 19.4, $p < 0.00$), comorbidities (OR: 5.7, $p < 0.03$) 9.1, $p < 0.01$), and use of invasive procedures (OR: 7.5, $p < 0.01$). Conclusion: Patients with comorbidities, previously colonized and who used invasive procedures in the ICU were more likely to develop KPC-producing enterobacterial infection when compared to those not exposed to such risks. Descriptors: Hospital Infection; Enterobacteriaceae; Risk factors

[327]
Microbiome and biofilm on adult, paediatric and neonatal Brazilian intensive care units surfaces

COSTA DM1,2; JOHANI K1; LOPES LKO2; MELO DS2; LIMA LKOL3; HU H1; TIPPLE AFV2; VICKERY K1

SURGICAL INFECTION RESEARCH GROUP, FACULTY OF MEDICINE AND HEALTH SCIENCES, MACQUARIE UNIVERSITY, SYDNEY, AUSTRALIA 2 FACULTY OF NURSING, FEDERAL UNIVERSITY OF GOIAS, GOIANIA, BRAZIL 3 PUBLIC REGIONAL HOSPITAL OF ARAGUAIA, REDENCAO, BRAZIL

Introduction: Infection control is highly relevant in intensive care units (ICUs), as inpatients are highly susceptible to infection. Decreased environmental contamination equates with decreased infectious agents transmission. We therefore assessed microbial contamination of ICUs surfaces. **Methods:** Fifty-eight high-touched surfaces were aseptically cut from adult, paediatric and neonatal ICUs from two large public Brazilian hospitals from Central-West and North Regions. Fragments ($\sim$4cm^2) were sonicated in PBS prior to culture and PCR/sequencing. Methicillin resistant *Staphylococcus aureus,* vancomycin resistant *Enterococcus* (VRE) and extended spectrum β-lactamase producing Gram negative organisms (ESBL) were detected using specific agar plates. Number of bacteria/cm^2 was determined by real-time qPCR (16s rRNA gene), and 27 samples were selected for microbiome analysis by MiSeq Sequencing. Biofilm was detected by scanning electron or confocal laser microscopy. **Results:** Although 71% of surfaces were contaminated with 1.32×10^4 bacteria/cm^2, as determined by qPCR, only 45% were culture-positive, including 4/26 with multidrug resistant organisms (MDRO); two ESBL-positive *Klebsiella*, and one VRE from the Central-West Region, and one ESBL-positive *Proteus* from North Region. Microbiome analysis revealed 170 genera, with the most abundant being *Staphylococcus, Streptococcus*, *Cloacibacterium* and *Acinetobacter*. Bacterial diversity was significantly different between the hospitals (P=0.02). Biofilm was confirmed on 71% of surfaces, including all MDRO positive samples. **Conclusions:** Clinically important bacteria, including MDROs, were found on high-touched ICUs surfaces. All MDROs were found associated with biofilm that has increased tolerance to disinfectants which can increase their environmental persistence and thus pose a risk to patients. Different weather/climate and surface cleaning protocols may explain microbiome diversity between hospitals.
Keywords: Intensive Care Unit, Surface Contamination, Antimicrobial Drug Resistance, Biofilms, Microbiome.

[328]

Air drying, prolonged soaking in water and alcohol on surgical instruments increases cleaning difficult

DAYANE DE MELO COSTA1,2; LILLIAN KELLY DE OLIVEIRA LOPES1; HONGHUA HU1; ANACLARA FERREIRA VEIGA TIPPLE2; KAREN VICKERY1

SURGICAL INFECTION RESEARCH GROUP, FACULTY OF MEDICINE AND HEALTH SCIENCES, MACQUARIE UNIVERSITY, SYDNEY, AUSTRALIA FACULTY OF NURSING, FEDERAL UNIVERSITY OF GOIAS, GOIANIA, BRAZIL

Introduction: Despite recommendations to the contrary, alcohol is frequently used on surgical instruments post-operatively. The effect of air drying, prolonged water soaking and alcohol treatment on retention of bacteria and soil on contaminated forceps was evaluated in this study.
Methods: 1) Haemostatic forceps were contaminated with *Staphyococcus aureus* or *Pseudomonas aeruginosa* and blood for five minutes, air-dried before spraying or wiping with ethanol, the subjected to prewashed conditions (mimicing washer-disinfector).
2) Forceps were contaminated with *S. aureus,* air-dried for ten, 75 or 240 minutes, soaked in water, or air dried, then treated with ethanol or isopropanol for ten seconds, and prewashed.
Following the prewash bacterial viability and soiling was determined by standard plate culture and crystal violet staining respectively. **Results:** 1) Spraying instruments with ethanol significantly reduced bacterial viability (P>0.05), and wiping them with alcohol soaked swabs had little effect. However, both application methods increased residual soil on forceps (P<0.05).
2) Ethanol (50-70%w/v) and isopropanol (25 to 70%w/v) significantly reduced viable bacterial numbers ($P<0.05$), but also increased bacterial protein attached to forceps, as did soaking in water or air drying for 75 or 240 minutes (P<0.001). Prolonged water incubation may have increased soil bacterial attachment to forceps. **Conclusion:** Treating contaminated instruments with alcohol, allowing them to dry or soak in water for extended periods increases cleaning difficulty and should be discouraged. Despite its bactericidal action, alcohol binds soil to instruments, which makes the most important step of reprocessing, the cleaning, harder.
Keywords: Surgical instrument, contamination, soil, cleaning, alcohol.

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Prognostic factors for early death among patients with bacteremia due to *Staphylococcus aureus*

SIMONE ARANHA NOUER; PAULA MOLINARI

UNIVERSIDADE FEDERAL DO RIO DE JANEIRO (UFRJ) – RIO DE JANEIRO, BRAZIL

Introduction: Staphylococcus aureus bacteremia is a major cause of mortality and morbidity. The aim of this study was to evaluate risk factors associated with early death (first three days) in patients with Staphylococcus aureus bacteremia admitted to a university hospital in Rio de Janeiro, Brazil. Methods: This was a retrospective cohort study of patients with Staphylococcus aureus bacteremia admitted between January 2011 and December 2014. Demographic and clinical data, invasive procedures, severity scores, antimicrobial treatment and clinical outcomes were recorded from hospital charts for analysis. Results: 161 patients were included, 57% were male, median of age was 61 years, median of Charlson score was two, and 27% had a Pitt score greater than three. Hospital onset infection (65%), vascular catheter-related infections (39%) and methicillin susceptible S. aureus (70%) were more frequent. The median time between diagnosis and the first dose of an antibiotic was one day, and the median of the time to positivity of the positive blood culture was 14,4 hours; minimal inhibitory concentration of vancomycin was 2 µg/mL in 12% of the strains. Any complication was frequent (20%). 21 (13%) deaths were observed in the first three days. In the logistic multivariate models, Pitt score >3 [OR 23,6 (IC 95%, 6,4 - 86,6)] was the only variable associated with early death. Each point increased in the Pitt score was associated with a greater (59%) chance of death on the third day of bacteremia. Conclusion: Pitt score on diagnosis of bacteremia was a prognostic factor for early mortality.

[331]
Prevalence of respiratory viruses in immunosupressed patients in an oncological hospital in São Paulo

ADRIANA COSTA E SILVA, JOSEANNE LIMA, JULIANA VIROLLI, SAYONARA SCOTA, ANDREIA SCHUNCK, LETICIA GARCIA, PAULA VIDAL, IVAN FRANÇA, BEATRIZ QUENTAL

AC CAMARGO CANCER CENTER, SÃO PAULO, BRAZIL; HOSPITAL EMILIO RIBAS, SÃO PAULO, BRAZIL

Introduction: Acute respiratory infections (ARI) are the most common infectious diseases in humans. Respiratory viruses are considered the most prevalent agents in respiratory infections, accounting for high morbidity and mortality, especially in people with cancer.
OBJECTIVE: Was to verify the prevalence of virus causing respiratory infections in immunosuppressed patients of an oncology hospital in São Paulo – Brazil. **METHODS:** We conducted a retrospective study at A.C Camargo Cancer Center, a 359 bed oncology hospital in São Paulo, Brazil. The study population included all people from 17 to 91 years old, with diagnostic of cancer, who tested positive for any respiratory virus between January and December, 2016. Demographic and clinical data were collected from the medical files. Respiratory viruses were detected using Real Time Polymerase Chain Reaction collected from nasopharyngeal wash, swab specimens or tracheal secretion. **RESULTS:** A total of 130 patients tested positive for respiratory viruses, with 148 viruses identified. The most prevalent viral agents found were Rhinovirus (35%), followed by Influenza H1N1 (24%), RSV (16%), Influenza and Parainfluenza (7%).We had 18 patients with positive results for more than one virus. Most of our patients had hematologic tumor (58%), and the most common was Lymphomas (43%). **CONCLUSION:** Respiratory viruses are an important cause of acute respiratory tract infection in people with cancer. Rhinovirus was the most prevalent virus in respiratory infection. The importance of diagnosis is not only due to the large variety of pathogens involved but also to the high frequency of co-infections. The correct identification of the agents viral can avoid the excessive use of antibiotics and antivirals in the treatment of respiratory infections. The use of the PCR method has been the most used in recent years and is currently considered the gold standard test for the detection of viral agents. Patients with cancer undergoing antineoplastic treatments, bone marrow transplants are subject to greater severity of acute viral respiratory infections.

[332]

Prognostic factors of bloodstream infections of patients assisted at hospital universitário Clementino Fraga Filho

SIMONE ARANHA NOUER; PAULA MOLINARI

UNIVERSIDDE FEDERAL DO RIO DE JANEIRO (UFRJ, RIO DE JANEIRO, BRAZIL.

Introduction: Bloodstream infections (BSI) may have worse prognosis. The aim of this study was to assess the epidemiological features of patients who develop BSI and the factors associated with early death. Methods: Prospective cohort of patients with BSI between November 2012 and October 2014. We evaluated clinical, epidemiological and treatment features. Only the first episode of each patient was considered for analyze the factors associated with early death. Results: We analyzed 565 episodes of BSI that occurred in 462 patients. Most had some condition or underlying disease (89,7%). Hospital acquired BSI was the most frequent origin (60%), with higher mortality (52.8%), and Gram negative were the most frequently isolated microorganism. Early death was observed in 21% of the episodes. Factors associated with early death were female gender, older age, higher Charlson score, shorter time to positivity of blood cultures, urinary tract infection, higher Pitt or SOFA scores, admission at an intensive care unit and inadequate treatment. In multivariate analysis, female gender (p=0.02; OR 1.85), higher Pitt (p<0.001; OR 1.47) score, and shorter time to positivity (p=0.01; OR 1.05) were associated with increased risk of early death. Appropriate treatment was a protective factor (p<0.001; OR 0.33). Conclusions: adequate therapy for BSI had high impact on prognosis mainly for those with higher Pitt score or with rapidly positive blood cultures.

[334]
Hospital infections in HIV / Aids patients at an institute of infectology of São Paulo, Brazil

ADRIANA MARIA DA COSTA E SILVA, ANDRÉIA CRISTINE BUENO PEREIRA DENELUZ SCHUNCK, SAYONARA SCOTA, REGIA DAMOUS FONTENELE FEIJÓ, ROSANA RICHTMANN, NILTON JOSÉ FERNANDES CAVALCANTE

INSTITUTO DE INFECTOLOGIA EMILIO RIBAS, SÃO PAULO, BRAZIL.

Introduction: Healthcare-associated Infections (HAI) consist of persistent adverse events in health services. It is known that infection leads to a considerable increase in patient care costs, as well as to increase hospitalization time, morbidity and mortality in the country's health services (1-3). Patients with HIV / AIDS are potentially a population at higher risk for acquisition of healthcare-related infections when compared to other groups of hospitalized patients (4). **Objective:** To verify the most prevalent health care-related infections in HIV / AIDS patients. **Methodology:** Retrospective study conducted from January to December, 2016, in a reference Hospital in Infectology of the State of São Paulo. The criteria for the diagnosis of hospital infections were based on the recommendations of the National Agency of Sanitary Surveillance (ANVISA) and the Centers for Disease Control and Prevention (CDC). The health care-related infections evaluated were: primary laboratory bloodstream infection, pneumonia, infection related to central vascular access, and urinary tract infection. **Results:** Of the total of 300 infections related to health care in the period from January to December 2016, 80.7% (242 cases) occurred in patients with HIV / AIDS. Of these 37.2% (90) in Intensive Care Unit and 62.8% (152) in Medical Clinic Unit. In the Intensive Care Unit, 45% (41) primary infection of laboratory blood flow, 7.8% (7) infection related to central vascular access, 31% (28) ventilator-associated pneumonia, 6.7%) Pneumonia, 5.5% (5) urinary tract infection, 3.3% (3) other infections. At the Medical Clinic Unit, 17.1% (26) primary infection of laboratory blood flow, 4.6% (7) infection related to central vascular access, 56% (85) pneumonia, 12.5% (19) Urinary tract infection, 9.8% (15) other infections. **Conclusion:** In the Intensive Care Unit the primary infection of the laboratory blood flow was the most prevalent and in the Clinical Medical Unit the infection with pneumonia in HIV / AIDS patients.

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Multi-hospital point prevalence study of HCAI in ICU in state Minas Gerais

IOLANDA ALVES BRAGA; PAULO P. GONTIJO -FILHO; ROSINEIDE MARQUES RIBASA

UNIVERSIDADE FEDERAL DE UBERLÂNDIA (UFU) -MINAS GERAIS, BRAZIL

introduction/aims: healthcare-associated infections (HCAIs) represent a real public health problem in developing countries which harbour social inequalities and variations in the complexity of healthcare. In the study, we describe the results of a point prevalence survey conducted in 2016, in adult intensive care units (ICU) of hospitals with different sizes. methods: a one-day point-prevalence survey in 2016 enrolled 28 (84.8%) ICU of hospitals from the twelve mesoregions located in the state of Minas Gerais, Brazil. hospitals were classified as university hospital with > 400 beds, university hospital with 201-400 beds, university hospital with < 200 beds, non university hospital with 201-400 beds and non-university hospital with ≤ 200 beds. HCAIs were defined according to ANVISA. Trained nurses visited each ICU and collected data on HCAIs, antimicrobial use and invasive procedures. univariate method were used for data analysis. results: in total, the hospitals had 371 beds of ICU, of which 303 were occupied at the time of the study. The overall HCAI prevalence was 51.2% (155/303 patients) and the infection rate acquired in the ICU was 79.4%. there were a total of 54.4% episodes of infection with microbiological criteria. most frequent. infection sites were lung (53.0%) and blood (27.6%). 147 bacterial isolates were cultured from HCAIs, most frequently Pseudomonas aeruginosa (20/76 Gram-negative [26.3%]), Acinetobacter baumannii (18/76 [23.7%]), and Staphylococcus aureus (25/61 Gram-positive [41.0%]). the strongest risk factors for HCAI acquired in ICU were use invasive devices, mainly central venous catheter and intubation; exposure to antibiotics and empirical antimicrobial therapy. conclusion: a high prevalence of HAIs was observed, mainly caused by non-fermenting Gram-negative bacteria in pneumonia. This in combination with a high rate of antimicrobial use illustrates the urgent need HCAIs must be a priority in the public health agenda of Brazil.

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The effects of chlorhexidine gluconate bathing on health care–associated infection in intensive care

MARIANA ANDRADE OLIVEIRA REIS; DANIELA VIEIRA DA SILVA ESCUDERO; EDUARDO ALEXANDRINO SERVOLO DE MEDEIROS

FEDERAL UNIVERSITY OF SÃO PAULO (UNIFESP), SÃO PAULO, BRAZIL.

Introduction/Aims: The use of chlorhexidine gluconate (CHG) for skin antisepsis can prevent the transmission of drug-resistant organisms in intensive care units (ICUs). Our purpose was to assess the effects of CHG bathing on health care–associated infections (HAIs) among critically ill patients. Methods: We conducted a prospective and comparative clinical trial. Four ICUs at a university hospital were randomized into two groups. Group 1, performed the bath with soap and water, and Group 2, the universal bath with CHG 2%, during a period of 12 months. Proportional risk models were used to assess differences in the occurrence of infection among study groups. Results: There were 1,640 hospitalizations, 41.2% in Group 1, and 58.8% in Group 2, and a total of 1,430 patients. The risk of acquiring any HAI or ventilator-associated pneumonia (VAP) was lower in Group 1, 27% (adjusted hazard ratio, 0.726, 95% CI, 0.539 to 0.979, p=0.036) and 42% (adjusted hazard ratio, 0.584, 95% CI, 0.380 to 0.896, p = 0.014), respectively. However, the risk of death in this same group was 86% higher (adjusted risk ratio, 1.858, 95% CI, 1.164 to 2.965, p=0.009). There was no significant difference between the groups in the risk of HAI by carbapenemase-producing Klebsiella pneumoniae (KPC), HAI by methicillin-resistant Staphylococcus aureus (MRSA), primary bloodstream infection (BSI) and catheter associated with urinary tract infection (CAUTI). Conclusions: Our study suggests that the use of daily CHG bathing did not reduce the incidence of HAI.

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The prevalence of occupational tuberculosis in health care services: a systematic literature review

ENI HILARIO DA SILVA[1]; MARIA CLARA PADOVEZE[1].

SCHOOL OF NURSING, UNIVERSITY OF SÃO PAULO. SÃO PAULO, BRAZIL

Introduction: Tuberculosis is a disease of worldwide repercussion that defies health care services (HS). It is estimated that one-third of the world population has a latent form of the disease. Healthcare workers (HCW) dealing with direct patient assistance may have higher contagion probability. However, the rates of the disease occurrence in this population have not been established in a systematic way yet. Objective: To estimate the global prevalence and incidence of occupational tuberculosis in HS by means of the literature review. Method: This is a systematic literature review according to the Joanna Briggs Institute, which sought to identify the rates of occupational tuberculosis in HCW. Primary studies were considered to include data on the incidence and prevalence of occupational tuberculosis or tuberculin skin test reaction in HCW. Reports of outbreaks and actions addressed to the community in general were excluded. Results: Out of ten cross-referenced databases, 2,081 potentially relevant studies were identified, without time and language limits, and the final selection was 17 studies. In all the articles selected, the outcome was latent tuberculosis. No studies with data regarding the tuberculosis disease were identified. The tuberculin skin test was used in 88.2% of the studies. The prevalence of latent tuberculosis ranged from 0.1 % to 59.7%. The annual incidence rate varied from 3.3% to 26%. As the risk and occupational exposure the absence of vaccination prior, the duration of care and performance in tuberculosis specific services were shown as relevant factors. One study identified the density of incidence of 547/100,000 people per year. Conclusion: Evidence indicates that tuberculosis is a relevant disease with the HCW and has important rates variations according to the context. The results demonstrate that despite the relevance of the phenomenon, there are still gaps in information on the incidence and prevalence of the tuberculosis disease in HCW.