Results. The methicillin resistance rate of *S. aureus* decreased from 59.4% (2007) to 48.6% (2016), and the decreasing trend kept significant through the study period but 2009 (mean annual decrease: 1.2%, $P < 0.05$). Inpatients of hospital B had higher age ($\beta = 0.01$, $P < 0.001$), and more male ($\beta = 0.005$, $P < 0.05$), but their resistance rate was not significantly higher ($\beta = 0.05$, $p = 0.12$) compared with hospital A. Age stratified analysis for all hospitals found the youngest group (younger than 35 years old) of both sex had steadily low resistance rates through the period, while the older groups had higher rates, but their rates decreased continuously.

Conclusion. The methicillin resistance rates of *S. aureus* decreased throughout 2007 to 2016 except 2009. The patients of the hospitals newly joining JANIS were higher in age, but the resistance rate of *S. aureus* was not statistically different from the hospitals having joined JANIS before 2014. Also, among JANIS member hospitals, older patients had higher resistance rates than younger patients, but their rates were continuously decreasing.

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2474. The 10 Years Scientific Contribution of the Cologne Cohort of Neutropenic Patients (CoCoNut) for Evaluating Treatment and Outcome of Healthcare-associated Infections

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Background. Healthcare-associated infections (HAIs) are a leading cause for morbidity and mortality in neutropenic patients.

Methods. The Cologne Cohort of Neutropenic Patients (CoCoNut) is an ongoing, prospective, longitudinal cohort, collecting inpatient data for analysis of epidemiology, risk factors, and outcome of neutropenic patients (at least one day of absolute neutrophil count < 500/µL) at risk for HAIs. The CoCoNut contains comprehensive data, i.e. patient characteristics, medication, chemotherapy, clinical data (e.g., diarrhea, body temperature), as well as laboratory, microbiological, virologic, and radiological results. The purpose of this cohort is to improve the knowledge on HAIs and management of anti-infective prophylaxis and therapy.

Results. To date, the CoCoNut includes 8,176 inpatient stays from 3,354 neutropenic patients treated at the hematology/oncology department of the University Hospital of Cologne between January 2009 and December 2018. Hodgkin and Non-Hodgkin lymphoma (32%), acute leukemia (28%), and chronic leukemia (10%) were the predominant underlying diseases; comprising 843/8,176 (10%) inpatient stays with allogenic stem cell transplantation. The overall number of neutropenic days and fever days (body temperature ≥ 38 °C) was 56,824 and 25,347, respectively. Blood stream infections (occurrence of fever and positive blood culture) occurred in 1,283/8,176 (16%) inpatient stays, and the overall mortality rate was 9% ($n = 716/8,176$). By now, 17 peer-reviewed articles analyzing epidemiology, treatment, and outcome of HAIs were published based on data from the CoCoNut.

Conclusion. Data extracted from the CoCoNut underlines the important role of evaluating innovative treatment strategies. Considering the remaining high infection rate for HAIs of neutropenic patients, the growing development of antimicrobial drug resistance, and the existing powerful methods for data processing (e.g., artificial intelligence), we will continue to utilizing and expanding the CoCoNut in the future.

Disclosures. **All authors:** No reported disclosures.

2475. Incidence of Multidrug-Resistant, Extensively Drug-Resistant and Pandrug-Resistant Gram-Negative Bacteria in Brazilian Intensive Care Units

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Background. The Centers for Disease Control and Prevention (CDC) proposed standard definitions for acquired resistance in bacterias. Resistant bacteria were categorized as multidrug-resistant (MDR), extensively drug-resistant (XDR) and pandrug-resistant (PDR). This study describes the incidence of Gram-negative MDR, XDR and PDR in 12 private and adult intensive care units (ICU's) from Belo Horizonte, Minas Gerais, the sixth most populated city in Brazil, with approximately 3 million inhabitants.

Methods. Data were collected between January/2013 to December/2017 from 12 ICU's. The hospitals used prospective healthcare-associated infections (HAI) surveillance protocols, in accordance to the CDC. Antimicrobial resistance from six Gram-negatives, causing nosocomial infections, were evaluated: *Acinetobacter sp., Klebsiella sp., Proteus sp., Enterobacter sp., Escherichia coli,* and *Pseudomonas sp.*. We computed the three categories of drug-resistance (MDR+XDR+PDR) to define benchmarks for the resistance rate of each Gram-negative evaluated. Benchmarks were defined as the superior limits of 95% confidence interval for the resistance rate.

Results. After a 5 year surveillance, 6,242 HAI strains were tested: no pan-drug-resistant bacteria (PDR) was found. *Acinetobacter sp.* was the most resistant Gram-negative: 206 strains from 1,858 were XDR (11%), and 1,638 were MDR (88%). *Pseudomonas sp.*: 41/1,159 = 3.53% XDR; 180/1,159 = 15.53% MDR. *Klebsiella sp.*: 2/1,566 = 0,1% XDR; 813/1,566 = 52% MDR. *Proteus sp.*: 0/507 = 0% XDR; 163/507 = 32% MDR. *Enterobacter sp.*: 0/471 = 0% XDR; 148/471 = 31% MDR. *Escherichia coli*: 0/681 = 0% XDR; 157/681 = 23% MDR. Benchmarks for the global resistance rate of each Gram-negative (MDR+XDR+PDR): *Acinetobacter sp.* = 92%; *Klebsiella sp.* = 62%; *Proteus sp.* = 40%; *Enterobacter sp.* = 48%; *Escherichia coli* = 33%; *Pseudomonas sp.* = 30%.

Conclusion. This study has calculated the incidence of Gram-negative MDR, XDR and PDR, and found a higher incidence of MDR *Acinetobacter sp.,* with an 88% multiresistance rate. Henceforth, developing countries healthcare institutions must be aware of an increased risk of infection by *Acinetobacter sp.*. Benchmarks have been defined, and can be used as indicators for healthcare assessment.

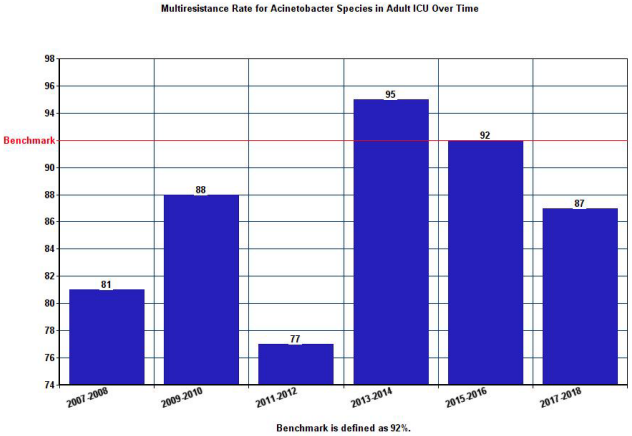

Table 2 - Benchmarks and Multiresistance Rates for Each Nosocomial Bacterium

Microorganism	Total of Tested Strains	Multiresistant Strains	Multiresistance Rate	Benchmark
Acinetobacter sp.	1858	1638	88%	92%
Klebsiella sp.	1566	815	52%	62%
Proteus sp.	507	163	32%	40%
Enterobacter sp.	471	148	31%	48%
E. coli	681	157	23%	33%
Pseudomonas sp.	1159	221	19%	30%

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2476. External and Internal Validation of the Healthcare-associated Infection Data in the Korean National Healthcare-associated Infectious Surveillance System (KONIS)

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