Results. at June 3rd, 2021, we evaluated all 5,570 Brazilian cities (Figure 1): 2,708 cities (49%) with COVID-19 normality rate less than 50% (full schools closure), 2,223 cities (40%) with normality rate between 50% and 70% (in-person learning only for 5 years and 8 months-old children), 583 with normality rate between 71% and 80% (in-person learning extended to children age 12 years and less), 583 cities (1%) with normality rate between 81% to 90% (in-person learning extended to the student population age 18 years), and just one city with 92% COVID-19 normality rate (in-person learning extended to all the student population). We calculated the COVID-19 normality rate between January and May, 2021, in four countries: Brazil, USA, UK, and Italy (Figure 2). At Jun, 3rd, 2021, percentage of people fully vaccinated in Brazil varied from 0% to 69%, an average of 11%.

Figure 1. COVID-19 Normality Rate in 5,570 cities in Brazil, Jun/03/2021.

Figure 2. COVID-19 Normality Rate between January and May, 2021: comparison among Brazil, USA, UK, and Italy.

Conclusion. COVID-19 vaccination programs take several months to implement. Besides fully vaccination of the population, it is important to check if people became really safe from the virus. The COVID-19 Normality Rate is a double check multivariate score that can be used as a criteria for optimal time to return to in-person learning safely.

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405. A Qualitative Study Based on a Case Series of Obstetric COVID-19 Patients to Determine Risks in Management Associated with Severity in a Government Hospital in the Philippines
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Session: P-17. COVID-19 Global Response/Response in Low Resource Settings

Background. Enterprise Risk Management (ERM) in healthcare is a method used to identify, assess and reduce risk to patients and the hospital organization. The objective of this study is to identify clinical and organizational challenges and risks in healthcare management caused by COVID-19, and its impact on patients and healthcare workers, in a low-resource obstetric setting.

Methods. From a census of patients from 1 April 2020 to 30 July 2020, four cases of COVID-19 in pregnancy representing different severity levels were selected. A patient tracer activity was done for each patient, documenting events that the patient and healthcare team experienced from admission to discharge. A case series on these patients was written. A focus group consisting of an OB-GYN resident, OB-GYN consultant, OB-GYN nurse, OB-GYN infectious disease consultant, and internal medicine resident and consultant, was formed. Each case was presented to the focus group to establish the context of risk assessment. Risks were identified using the framework of Enterprise Risk Management. Each risk was classified according to their risk domain and severity. Root cause analysis was used to identify the causes of the risks.

Results. Operational risks identified were delayed swab results, false negative swab results, and delayed patient transport. Clinical/Patient risks identified were COVID-19 exposure of healthcare workers and other non-COVID patients, inadvertent community exposure, risk for severe clinical manifestations of COVID-19, and lack of specific treatment for COVID-19. Risk to human capital identified were COVID-19 infection of hospital staff and decreased quantity of workforce due to quarantine. Most risks were assessed to be moderate risk or high risk in terms of severity. Root cause analysis showed that common causes of risks were due to exposure to asymptomatic patients and delayed and false-negative swab results.

Conclusion. The results of this study may be used towards the final steps of ERM: risk evaluation, treatment and management, in a low resource setting.

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406. Incidence of Community and Hospital Acquired Infections in Critically Ill COVID-19 Patients in the Dominican Republic
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Session: P-17. COVID-19 Global Response/Response in Low Resource Settings

Background. The disease caused by SARS-CoV-2, COVID-19, has caused a global public health crisis. COVID-19 causes lower respiratory tract infection (LRTI) and hypoxia. There is a paucity of data on bacterial and fungal coinfection rates in patients with COVID-19 at low and middle income countries (LMICs). Our objective is to describe the clinical characteristics of critically ill patients with COVID-19 in the Dominican Republic (DR)

Methods. We performed a retrospective review of patients admitted to the ICU with COVID-19 from March 14th to December 31st 2020, at a 296-bed tertiary care level and teaching Hospital in the Dominican Republic. Demographic and clinical information was collected and tabulated. Laboratory confirmed bacterial and fungal infections were defined as community acquired infections (CAI) if diagnosed within 48 hours of admission and hospital acquired infections (HAI) when beyond 48 hours. Microbiologic data was tabulated by source and attribution.

Results. Our cohort had 382 COVID-19 patients. Median age was 64 and most were male (64.3%) and 119 (31.1%) were mechanically ventilated and 200 (52%) had central venous catheters. A total of 28 (7%) laboratory confirmed community acquired infections and 55 (14%) HAs occurred. Community acquired infections included 13 (46%) bloodstream infections (BSIs), 11 (39%) urinary tract infections (UTIs) and 6 (21%) LRTIs. HAs included 39 (70%) BSIs, 11 (20%) UTIs and 6 (11%) ventilator associated pneumonia (VAP). Causal organisms of community and hospital acquired BSIs and UTIs are in Figure 1 and Figure 2 respectively. All-cause mortality was 35.3% (135/382) in our cohort, and 100% mortality (76) in those with confections.
Community and hospital acquired infections were common in COVID-19 patients admitted to the ICU and likely contributed to patient outcomes. More than two thirds of HAIs in the ICU were BSIs. Central venous catheter device utilization and maintenance may play a role in BSIs, along with immunosuppression from COVID-19 therapeutics and translocation from mucosal barrier injury. Mortality in patients with confections was higher than those without. Infection prevention strategies to reduce device utilization during COVID-19 in LMICs may have an impact on HAIs.

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### 407. Minimum Manufacturing Costs, National Prices and Estimated Global Availability of New Repurposed Therapies for COVID-19

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**Session:** P-17. COVID-19 Global Response/Response in Low Resource Settings

**Background.** Currently, only dexamethasone, tocilizumab and sarilumab have conclusively been shown to reduce mortality of COVID-19. No drug for prevention or treatment in earlier stages of COVID-19 are yet found, with previously promising drugs such as hydroxychloroquine and remdesivir have been shown to be ineffective. Several new candidates are now being studied in clinical trials. Safe and effective treatments will need to be both affordable and widely available. We therefore revised our original 2020 analysis to reflect recent developments. In this update we analysed the cost of production, current national availability, and API availability for oral and IV dexamethasone, ivermectin, colchicine, dutasteride, budesonide, baricitinib, tocilizumab, sarilumab and monoclonal antibodies tocilizumab (CR-PSAR) and Klebsiella pneumoniae (CR-Kp) from COVID-19 therapeutics and translocation from mucosal barrier injury.

**Methods.** Costs of production for new and potential COVID-19 drugs (dexamethasone, ivermectin, dutasteride, budesonide, baricitinib, tocilizumab, sarilumab and colchicine) were estimated using an established and published methodology based on costs of active pharmaceutical ingredients (API), extracted from the global shipping records database Panjiva. This was compared with national pricing data from low, medium, and high-income countries. Annual API export volumes from India were used to estimate the current availability of each drug.

**Results.** Repurposed therapies can be generically manufactured at very low per-course costs: ranging from $2.58 for IV dexamethasone (or $0.19 orally) to $0.12 for ivermectin. No export price data was available for baricitinib, tocilizumab or sarilumab.

**Conclusion.** Successful management of COVID-19 will require equitable access to treatment for all, not just those able to pay. Repurposed drugs can be manufactured at very low costs if shown to be clinically effective, and offers an affordable, widely available option for patients at all stages of the disease from pre-exposure prophylaxis to asymptomatic and mild infections, through to critical care until vaccination coverage is expanded.

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

### 408. Impact of the COVID-19 Pandemic on Antimicrobial Use and Resistance in the United States and the Dominican Republic

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**Session:** P-17. COVID-19 Global Response/Response in Low Resource Settings

**Background.** The disease caused by SARS-CoV-2, COVID-19, has caused a global public health crisis. Lower respiratory tract infections (LRTIs) caused by COVID-19 has led to an increase in hospitalizations. Disease severity and concerns for bacterial co-infections can increase antimicrobial pressure. Our aim is to define and compare the impact of COVID-19 on antimicrobial use (AU) and antimicrobial resistance (AMR) in the Dominican Republic (DR) and the United States (US).

**Methods.** We performed a retrospective review of AU and antimicrobial susceptibility patterns from 2019-20 at a hospital in the US (H-US) and the DR (H-DR). Our sites are community teaching hospitals with 151 beds in H-US and 295 beds in H-DR. After AU was tabulated, percent changes between 2019-20 were calculated. Resistance patterns for extended-spectrum beta-lactamase producing (ESBL) E. coli, ESBL Klebsiella pneumoniae (ESBL-Kp), carbapenem resistant Pseudomonas aeruginosa (CR-PSAR) and Klebsiella pneumoniae (CR-Kp) were tabulated and percent changes between 2019-20 were calculated.

**Results.** AU increased by 10% in H-US and 25% in H-DR, with carbapenem use increasing by 268% and 144% respectively. Ceftriaxone use increased by 30% in H-US and 144% in H-DR. Azithromycin increased 268% and 144% respectively. Ceftriaxone use increased by 30% in H-US and 144% in H-DR.

**Conclusion.** Successful management of COVID-19 will require equitable access to treatment for all, not just those able to pay. Repurposed drugs can be manufactured at very low costs if shown to be clinically effective, and offers an affordable, widely available option for patients at all stages of the disease from pre-exposure prophylaxis to asymptomatic and mild infections, through to critical care until vaccination coverage is expanded.

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