

BACKGROUND

- During the coronavirus disease 2019 (COVID-19) pandemic, healthcare facilities (HCFs) were overwhelmed with increasing patient volumes and limited resources.
- The effects of the pandemic on antimicrobial stewardship (AMS), infection prevention and control (IPC), and clinical microbiology practices are not well-described
- We evaluated changes in AMS, IPC, and clinical microbiology across six HCFs in South America following the onset of the COVID-19 pandemic.

METHODS

- The survey was conducted at two HCFs in each Argentina, Brazil and Chile (Table 1.)
- Data on facility characteristics, antibiotic procurement and distribution, AMS activities, IPC activities, and clinical microbiology were collected from designated specialists within each HCF
- We compared pre-pandemic (March 2018 – February 2020) to during pandemic (March 2020 – February 2021)

RESULTS

- ICU beds increased across all 6 HCFs by 57-633% (Figure 1.)
- number of ventilators increased by 15-317% in 5 out of the 6 HCFs (Figure 2.)
- Healthcare personnel shortages were observed in all 6 HCFs, notably common for nurses and laboratory personnel.
- Extended use of N95 respirators was reported across all 6 HCFs with 2 doing extended use of gowns and medical masks. The only PPE reused was N95 respirators in 2 HCFs.
- Difficulties in cohorting patients with multi-drug resistance organism (MDRO) was reported by one of the HCFs.
- Three HCFs reported shortages in drugs with coverage for MRSA, gram-negative bacteria, and fungal pathogens despite no reports of interruption in AMS activities in these HCFs.
- Two hospitals reported delays on microbiology results.

CONCLUSIONS

- The COVID-19 pandemic led to substantial increases in ICU beds, number of ventilators, and extended use of PPE suggesting increases in admission of severe patients and suboptimal IPC practices in these HCFs.
- It is unclear if shortages in agents commonly used to treat MDRO was related to overuse or access difficulties. Additional evaluation is needed to determine the impact of these findings on antimicrobial resistance and antimicrobial use.

AFFILIATIONS

- Centers for Disease Control and Prevention, Atlanta, GA, United States
- Hospital das Clínicas da Universidade de São Paulo, São Paulo, Brazil
- Hospital Alemão Oswaldo Cruz, São Paulo, Brazil
- Instituto de Ciencias e Innovación en Medicina (ICIM), Facultad de Medicina Clínica Alemana, Universidad del Desarrollo, Santiago, Chile
- Millennium Initiative for Collaborative Research On Bacterial Resistance (MICROB-R), Santiago, Chile
- Hospital Privado Universitario de Córdoba, Córdoba, Argentina
- Hospital Dr. Angel Ferreyra, Córdoba, Argentina
- Clínica Alemana, Universidad del Desarrollo, Santiago, Chile
- Hospital Padre Hurtado, Santiago, Chile
- Jhpiego, Baltimore, Maryland, United States

COVID-19 pandemic led to substantial imbalance of needs and resources across 6 hospitals in South America with suboptimal IPC practices observed.

Table 1. Facility Characteristics

	1	2	3	4	5	6
Country	Argentina	Argentina	Brazil	Brazil	Chile	Chile
Private/Public	Private	Private	Private	Public	Private	Public
Adults inpatient beds	263	126	357	886	371	220

Figure 1. ICU Bed Change

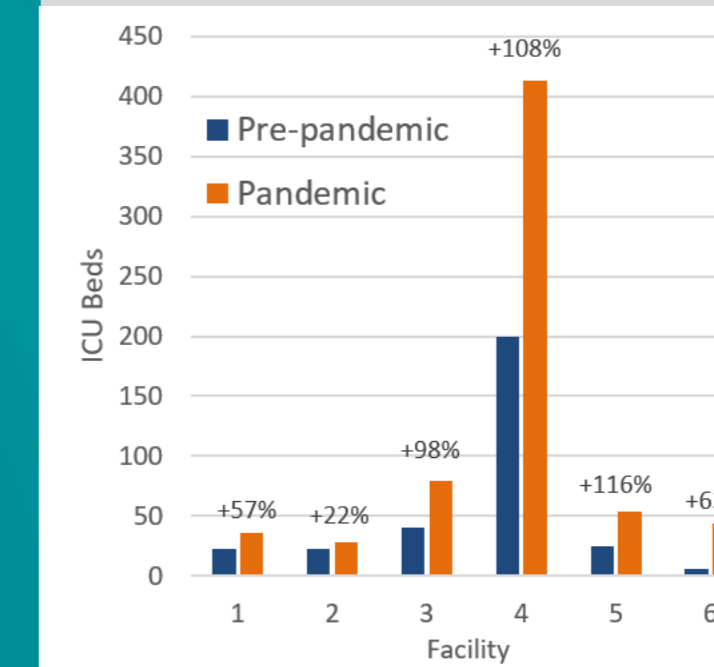


Figure 2. Ventilator Number Change

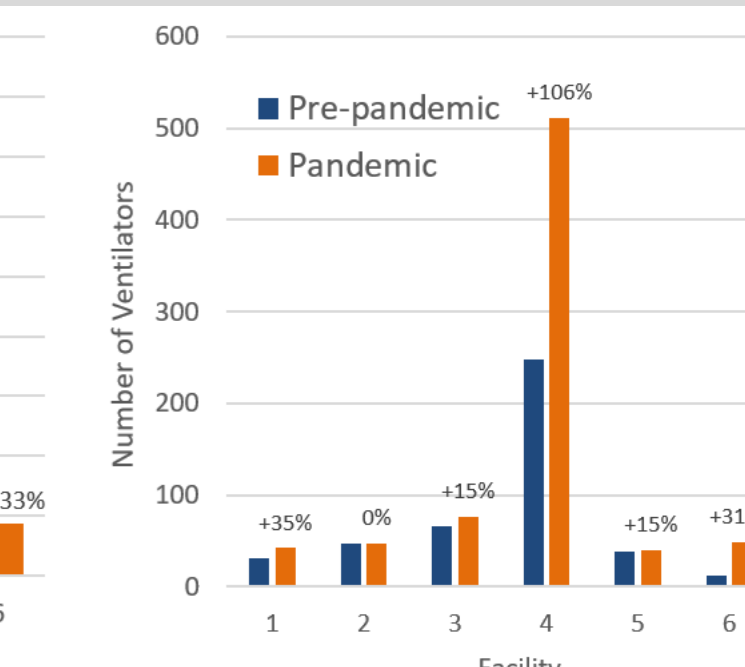


Table 2. Reported Changes during COVID-19 Pandemic

Facility	1	2	3	4	5	6
Antibiotic shortages	None	None	None	Yes	Yes	Yes
Personnel shortages	Respiratory physiotherapist	Nurses	Nurse, Nurse assistant, physician, respiratory therapist	Micro tech	Micro tech, Med Tech	Physician, Nurse, Micro tech, Med Tech
Changes in ASP	None	None	AU review interruption	None	Started AU review	None
Type of PPE with extended use	N95 respirators	N95 respirators	N95 respirators	N95 respirators	Gowns, N95 respirators, medical masks	Gloves, gowns, N95 respirators, medical masks
Type of PPE reused	N95 respirators	N95 respirators	None	None	None	None
Changes in other IPC practices	None	None	None	Stopped cohorting MDRO patients	None	None
Changes in microbiology laboratory practices	None	None	None	None	Delayed AST	Delayed identification and AST

Abbreviations: ICU, intensive care unit; AU, antibiotic use; MDRO, multidrug-resistant organism; AST, antibiotic susceptibility testing

SCAN HERE FOR MORE INFORMATION



CONTACT INFO

Hanako Osuka
nwd6@cdc.gov

