Presentation Type:
Poster Presentation - Oral Presentation
Subject Category: Surveillance/Public Health
Lessons from an evaluation of an antimicrobial resistance laboratory capacity telementoring program in Ethiopia and Kenya

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Background: Antimicrobial resistance (AMR) presents a global health threat. Training laboratory technicians to accurately identify and report AMR is critical in low- and middle-income countries (LMICs) to control the spread of AMR. Ethiopia and Kenya implemented a telementoring program, ECHO AMR, via the Project ECHO learning platform to improve laboratory technician capacity to isolate, identify, and report AMR organisms; to perform antimicrobial susceptibility testing (AST); and to develop a community of learning. Between January 2018 and January 2022, biweekly 1-hour sessions were held for 8 and 22 laboratories averaging 19 or 43 participants per session in Ethiopia and Kenya, respectively. Each session included a lecture, a laboratory challenge case presentation, and discussion. An evaluation was conducted to assess perceived strengths and weaknesses of the program and its usefulness in improving bacteriology capacity. **Methods:** In July–August 2022, semistructured key informant interviews of purposively and randomly selected laboratorians were conducted to understand participant perspectives of ECHO AMR, including session structure and content, changes in laboratory performance, and the virtual learning platform. Eligible participants attended at least one-third of available sessions in Ethiopia (8 of 26 sessions) or Kenya (5 of 16 sessions) during 2021. Key informant interviews were transcribed and systematically reviewed to identify key themes. **Results:** In total, 22 laboratory technicians participated in the key informant interviews: 12 in Ethiopia and 10 in Kenya. Participants reported that the ECHO AMR session structure was well organized but recommended increasing session duration to allow more time for discussion. Technical content was presented at an appropriate level and was highly rated. However, participants suggested including more subject-matter experts to provide the lectures. All participants reported positive change in laboratory practice, including implementation of international standards for AST, better quality control, improved confidence and critical thinking, and increased AMR awareness and reporting. Participants learned well in the virtual environment, with the platform providing wide-ranging geographic interactions to share skills and knowledge among sites without travel. However, there were connectivity issues, competing work priorities during sessions, and a lack of dedicated space for team participation. **Conclusions:** Laboratory technicians reported that virtual laboratory training was well-received, efficient, and impactful. Participants benefited both individually and collectively, as a laboratory. Suggested improvements included increasing session duration, connectivity support, and including more subject-matter experts to broaden technical content. Further assessment is needed to evaluate the ECHO AMR's impact on laboratory practices through observation and laboratory data. Virtual programs, requiring less time and resources than traditional in-country trainings, can be optimized and used to share and increase bacteriology knowledge in LMICs.
Disclosures: None

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Lessons from leadership transition of an AMR telementoring program to sustain laboratory capacity building in Ethiopia

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Background: Considering the threat of antimicrobial resistance (AMR), Ethiopia implemented strategies to combat AMR, including partnering with the American Society for Microbiology (ASM) to conduct an AMR training program using the Project ECHO learning platform. ECHO AMR was used to virtually connect subject-matter experts with participating sentinel laboratories in remote locations to provide ongoing education, telementoring, and foster peer-to-peer learning and problem-solving in microbiology. In phase 1, the ASM had primary leadership in conducting sessions and project administration. In phase 2, roles and responsibilities transitioned from the ASM to the Ethiopian Public Health Laboratory (EPHI) with support from ECHO India. Here we describe the transition process and lessons learned. **Methods:** From December 2020–2021, biweekly 1-hour sessions were conducted for 8 sentinel laboratories. Each virtual session included a lecture led by a subject-matter expert, a case presentation by a participating laboratory, open discussion, and feedback via an end-of-session online survey. Following a transition plan, initial ASM-EPHI transition activities included formal administrative and logistical training, including participation in a 3-day Project ECHO-immersion program provided by ECHO India. Selected administrative and technical roles and responsibilities, including further developing their own SMEs, were transitioned from ASM to EPHI every 4 sessions. ASM conducted postsession reviews with EPHI and ECHO India to discuss successes and suggested improvements. **Results:** Leadership of ECHO AMR was fully transitioned to EPHI over 12 months. End-of-session surveys and postsession reviews indicated the transition process was successful, with EPHI staff leading the lectures, session coordination, and facilitation, and positive feedback from session participants. Challenges included variable sentinel site participation due to competing priorities such as COVID-19 testing and poor internet connectivity during the rainy season. Lessons learned included the need to use a gradual transition strategy with close monitoring, training facilitators to maintain implementation fidelity (level of reproducibility to conduct ECHO AMR as in phase 1) and improve participation, and assessing individual learning, using pretests and posttests. Recommendations included that ASM should remain as an external technical advisor to ensure program technical depth and session facilitators be trained to improve participation in the discussions. Implementation fidelity compared to phase 1 was considered moderate, with the gap primarily due to the need for dedicated release time from laboratory duties to ensure session leadership, coordination, and facilitation. **Conclusions:** Leadership and laboratory workforce capacity-building responsibility for AMR training was successfully transitioned from ASM to EPHI, promoting self-sufficiency in training and with far-reaching benefits in the global fight against AMR.
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Subject Category: VAE
Assessment of changes in the national surveillance data for adult and pediatric VAE during the COVID-19 pandemic in hospitals

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Background: Among US acute-care hospitals (ACHs) reporting to the NHSN, significant increases in the incidence of Ventilator-Associated Events (VAEs) were observed during the COVID-19 pandemic years in comparison with 2019. We assessed changes in the national event-level VAE data, including the incidence of specific event-types: Ventilator-Associated Condition (VAC), Infection-related Ventilator-Associated Complication (IVAC) and Possible Ventilator-Associated Pneumonia (PVAP). We also examined changes in associated pathogens, and we evaluated incidence density rates (IDRs) of pediatric VAE (PedVAE) before and

during the pandemic years. **Methods:** We analyzed data on VAE and PedVAE reported to NHSN between 2019 through the second quarter of 2022 (2022Q2) in ACHs. Annual proportions of VAC, IVAC, or PVAP were calculated; changes versus 2019 were assessed. The 10 most common PVAP pathogens reported annually were examined, and the percentages and ranks for each were calculated. Among pediatric and neonatal locations, PedVAE IDR were calculated as the number of events per 1,000 ventilator days and were compared between the pre-pandemic and pandemic years. All comparisons were conducted using a mid-P exact test, and P<0.05 was considered statistically significant. **Results:** Between 1,266 - 1,357 ACHs reported VAE data each year. A total of 24,836 (2019), 37,592 (2020), and 50,362 (2021) VAEs were reported. The proportion of VAC events in 2020 (64.1%) was significantly higher than in 2019 (62.9%), while the 2020 and 2021 PVAP proportions (8.7% and 9.2%, respectively) were significantly lower than in 2019 (10.0%). The majority of VAEs were reported from the same location types annually. The top 3 PVAP pathogens reported for each year remained unchanged: Staphylococcus aureus, Pseudomonas aeruginosa, Klebsiella. However, the proportion identified as Haemophilus influenzae decreased significantly each year from 2019-2021, with the rank dropping from #5 in 2019 (6.6%) to #10 in 2021 (2.3%). Between 199 – 257 ACHs conducted PedVAE surveillance. PedVAE IDR were significantly lower in 2020 (0.8), 2021 (1.1), and the first half of 2022 (0.8) when compared to 2019 (1.3). **Conclusions:** This study provides a national view of specific VAEs before and during the COVID-19 pandemic. Some changes in the associated pathogens, and the proportions of VAC and PVAP, were observed. This study is the first to produce national benchmarks for PedVAE IDR. Additional ACHs conducting PedVAE surveillance in NHSN would improve the representativeness of our results.

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Subject Category: Antimicrobial Stewardship
Antimicrobial Stewardship in a Psychiatric Hospital: Opportunities for Improvement

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Background: Western State Hospital (WSH) is an 800-bed, state-owned psychiatric hospital in Washington State which services individuals in 20 counties. WSH provides services and inpatient treatment to patients referred via behavioral health providers and/or the civil court system. Because many patients are admitted with serious, long-term illness, WSH also provides primary care and addresses infectious syndromes encountered in admitted patients. In January 2016, WSH officially began their antimicrobial stewardship program (ASP). In 2017 WSH joined the UW Center for Stewardship in Medicine (UW-CSiM) to grow and optimize their ASP. **Methods:** The lead pharmacist at WSH participated in weekly hour-long education and tele-mentoring sessions through the UW-CSiM program. Educational materials were adapted from UW-CSiM didactics and delivered to providers during regular meetings and grand rounds. Daily pharmacist led prospective audit with feedback was conducted. Antibiotic use data were collected and measured by days of therapy (DOT) per 1000-patient days from pharmacy dispensing records from 2015 to 2022. **Results:** From 1/1/15 to 12/31/22, there was a consistent trend of decreasing antibiotic consumption annually. In particular, antibiotic use decreased by over 65% ranging from 35-43 DOT per 1000 patient-days in 2015 to 9-11 DOT per 1000 patient-days in 2022 (Figure 1). This translates to approximately 1000 antibiotic days of therapy in 2015 and 200 days of antibiotic therapy in 2022. As of 2022, the two most common antibiotics used were cephalexin and sulfamethoxazole/trimethoprim **Conclusion:** Although treating infections is not a principal focus of a psychiatric hospital, patients receiving care in inpatient psychiatric facilities do experience common infections and receive antibiotics during their stay. At WSH, initiation of an antimicrobial stewardship program was associated with sustained decrease in total antibiotic DOT over 7 years. These data highlight the impact of tele-education and tele-mentoring in infectious diseases and antimicrobial stewardship as a path to build a successful antimicrobial stewardship even without formal infectious diseases training. Our single center experience at a large psychiatric hospital demonstrates the use of antimicrobials in these facilities and the opportunity for a large impact of an antimicrobial stewardship program in inpatient psychiatric facilities.

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Subject Category: Implementation Science
Increasing Registration for a VA Multidrug-Resistant Organism Alert Tool

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Objectives: To address the importation of multi-drug-resistant organisms (MDROs) when a colonized or infected patient is transferred from another VA facility, the Veterans Health Administration (VHA) launched the Inpatient Pathogen Tracker (IPT) in 2020. IPT tracks MDRO-infected/colonized patients and alerts MDRO Program Coordinators (MPCs) and Infection Preventionists (IPs) when such patients are admitted to their

Total Days of Treatment per 1,000 Bed Days