

by ceftriaxone (23.0%), amoxicillin (16.8%), metronidazole (8.5%), and others (12.7%). Typhoid accounted for 34.8% of broad-spectrum antibiotics, UTI accounted for 17.7%, malaria accounted for 12.5%, 25.5% were unspecified, and 9.5% were for unclear diagnoses. Typically, combinations of fluoroquinolones and cephalosporins were used to treat typhoid and UTIs. **Conclusions:** This cross-sectional study represents a broad picture of antibiotic prescribing patterns at the King Harman Hospital. There was no strict adherence to the WHO recommended prescribing guidelines. These findings also indicate the degree of irrational and inappropriate prescribing of broad-spectrum antibiotics. This study highlights the need for a comprehensive assessment of antimicrobial use to gain a better understanding of national antibiotic use and to guide interventions to reducing AMR.

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Disclosures: None

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Disagree

Christiana Kallon

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Presentation Type:

Poster Presentation

Staphylococcal Decolonization to Prevent Surgical Site Infection: Is There a Role in colorectal surgery?

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Background: Colorectal surgery is associated with a high risk of surgical site infections (SSIs), with an incidence ranging from 16.9% to 20%, and SSIs are associated with significant morbidity and mortality, prolonged length of hospitalization, and increased health care costs. Staphylococcal decolonization is an attempt to alter the microbiome to prevent staphylococcal and other skin flora from accessing the surgical site, and This practice effectively reduces SSIs in orthopedic, neurologic, and cardiac surgeries. A staphylococcal decolonization protocol was enacted in colorectal surgeries at our institution beginning in October 2016. We compared patient outcomes between patients who did and did not undergo preoperative staphylococcal decolonization. **Methods:** All patients undergoing nonemergent NHSN-defined colorectal procedures from July 2015 until June 2019 at a tertiary-care medical center were included in this retrospective study. Staphylococcal decolonization was performed using chlorhexidine 2% body wash solution, mupirocin nasal ointment, and chlorhexidine 0.12% oral rinse all twice daily for 5 days prior to surgery. All SSIs were defined by NSHN criteria. The primary outcome was SSI, and secondary outcomes were superficial wound infection (SIP) and organ-space infection (IAB). Predictive variables included decolonization status (yes or no), age, gender, body mass index, procedure duration, American Society of Anesthesiologists (ASA) score, diabetes, smoking, and surgical oncology service. Surgical antimicrobial

prophylaxis with cefazolin and metronidazole OR cefoxitin, and chlorhexidine skin preparation were standard throughout the study period. Univariate analysis was performed using a χ^2 or *t* test. Multivariable logistic regression was performed to control for all clinically important variables above. All statistical analyses were done using SAS version 9.4 software (Cary, NC). **Results:** In total, 1,139 patients underwent nonemergent colorectal surgery from July 2015 to June 2019. There were 74 SSIs: 42 IABs and 32 SIPs. Decolonization was performed in 332 of 1,139 cases (29%). There was no difference in overall SSIs between those decolonized and not decolonized ($P = .50$). However, SIPs were reduced in the group receiving decolonization: 1.2% (4 of 332) versus 3.5% (28 of 807) ($P = .04$). When controlling for known SSI risk factors, those not receiving decolonization remained at increased risk of SIPs (OR, 3.79; 95% CI, 1.14–12.61; $P = .03$). **Conclusions:** Staphylococcal decolonization may prevent a subset of SSIs in patients undergoing colorectal surgery.

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Status of Infection Prevention and Control in Selected Hospitals in Sierra Leone

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Background: Improved infection prevention and control (IPC) reduces healthcare-associated infections (HAIs). Following the Ebola virus disease (EVD) outbreak in West Africa (2014–2016), Sierra Leone made substantial investments in strengthening IPC in health facilities. The WHO identified 8 core components of IPC and developed an accompanying assessment framework (IPCAF) to monitor IPC capacity and progress. The IPCAF reflects the 8 WHO core components of IPC. The core component constitute a consistent universal outline that supports guidance to healthcare decision makers and service providers at national and international levels. We conducted an in-depth assessment of IPC practices in Sierra Leone using the IPCAF tool. **Methods:** This assessment was conducted in July 2019 over a 2-week period. Data were collected through interview with IPC focal persons as well as observations and corroboration of document and immediate feedback on findings given to facilities through brief exit meetings. All areas of the facility were assessed (ie, all wards, operation theatres, laboratories maternity units, sterile service departments, waste management units, etc). The main objective was to identify the gaps and challenges faced by health facilities. Each component was scored based on the responses and observations, with the scores ranging from zero to 100 and the maximum score was 800. The IPCAF allocated hospitals to 4 different “IPC levels”: inadequate, basic, intermediate, and advanced. **Results:** Moreover, 13 hospitals were assessed, including 12 primary level hospitals and 1 secondary level hospital. The median score was 367. 5 (IQR, 110), which corresponds to a basic level of IPC. Primary-level hospitals scored higher (median, 373; IQR, 112.5) compared to secondary-level hospitals (median, 280; IQR, 0). The lowest score was in healthcare-associated infection surveillance (median, 0; IQR, 5), and the highest score was in the built environment, availability of materials, and equipment to support IPC (median, 62.5; IQR, 22.5). **Conclusions:** The assessment provides a baseline of the status of IPC in Sierra Leone

in the post-EVD period using the IPCAF tool. These results can be used to guide healthcare facilities and policy makers in developing strategies for IPC quality improvement projects to improve low-performing healthcare facilities. Significant gaps were observed in key IPC areas, especially in secondary-level health facilities. There is need to establish national surveillance for healthcare-associated infections, to institutionalize monitoring of IPC practices, and to ensure an appropriate staffing-workload ratio in health facilities.

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Disagree

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Poster Presentation

The Design and Implementation of an IPC Certificate Course: Experiences From Sierra Leone

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Background: Trained infection prevention and control (IPC) practitioners are critical to reducing healthcare-associated infections (HAI) and improving patient safety. Despite having HAI rates 3 times higher than high-income countries, many low- and middle-income countries (LMICs) lack trained IPC professionals. During the 2014–2016 Ebola outbreak in West Africa, the Sierra Leone Ministry of Health and Sanitation (MoHS) recognized this need and appointed and trained IPC focal persons at all district hospitals. Following the outbreak, MoHS requested assistance from the US CDC to develop and implement a comprehensive IPC training program for IPC specialists.

Methods: The CDC, alongside its partners, convened a multidisciplinary team to develop an IPC certificate course. ICAP led the curriculum development process using a “backwards design” approach, starting with development of competencies and learning objectives, then designing an evaluation framework and learning strategies, and finally, identifying course content. The curriculum was based on existing resources, primarily designed for high-income countries, which were adapted to the Sierra Leone context and aligned with national IPC policies and guidelines. Additionally, an IPC steering committee, led by MoHS, was established to provide national leadership and oversight and make country-level decisions regarding accreditation and career pathways for IPC specialists. **Results:** The course includes three 2-week workshops over 6 months consisting of classroom didactics and hands-on activities. Topics include standard and transmission-based precautions, microbiology, laboratory,

HAI, quality improvement, leadership, and scientific writing. Between sessions, participants conduct IPC activities at their work site and share results during subsequent workshops. Participants receive electronic tablets, which contain course content, assessment tools, and references, to upload their work into a cloud-based storage system for facilitators to provide feedback. They also receive in-person mentorship and connect with peers through a group messaging platform to share lessons learned. Participants’ knowledge and skills are assessed using a before-and-after test and observing them perform IPC practices using standardized checklists. The first cohort of 25 participants will complete the course in November 2019. **Conclusions:** The IPC certificate course is the first comprehensive, competency-based IPC training in Sierra Leone. Successes, challenges, sustainability, and lessons learned remain to be determined; however, based on similar models, the course has the potential to significantly improve IPC in Sierra Leone. Additionally, it is a model that can be replicated in other resource-limited settings.

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The impact of Multimodal Strategy Intervention Program on Hand Hygiene Compliance at a University Teaching Hospital in Sierra Leone (Ola During Children’s Hospital)

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Background: Hand hygiene (HH) is considered a primary measure necessary for reducing healthcare-associated infections (HAIs). Despite its significance, the lack of compliance among healthcare workers continues to be a problem throughout the world. The Ebola outbreak in our country has accelerated efforts to strengthen the health system in Sierra Leone. The WHO multimodal strategy on HH is an integral approach to the reduction of HAIs. **Objectives:** We sought to improve HH compliance among healthcare workers, to maintain a culture of safety in the healthcare facility, and to implement evidence-based practices for improved patient outcomes. **Methods:** A WHO multimodal strategy for direct observation of HH was adapted. We observed clinical staff (doctors, nurses and community health officers) in the intensive care unit (ICU), resuscitation ward (Resus) and emergency room (ER) from August to September 2019. A 4-day training session was conducted in 3 weeks. Provision of locally produced alcohol-based hand rub (ABHR), soap, and water emphasize the importance of HH. HH reminders were posted in all clinical areas. Healthcare worker knowledge about HH was assessed before and after the intervention. **Results:** We observed 1,535 HH opportunities, and only 706 HH actions were performed. Locally produced ABHR was used in 470 HH actions. Handwashing with soap and water was used in the remaining HH actions. Baseline compliance was 36% and increased to 50% in the first and second months. Healthcare worker knowledge scores at the baseline averaged 25% and increased to 65% after 2 months. HH compliance was highest in the ICU (44%), followed by the emergency ward (30%). The resuscitation ward had the lowest compliance (26%). Compliance among doctors was 32%, nurses 46%, and CHOs 22%. **Conclusions:** Promotion of HH is feasible and attainable and can be sustained in a resource- constrained setting using a multimodal improvement strategy. The local production, availability, and use of ABHR have significantly increased HH compliance. However, absolute compliance remains low, and a strong