implementation and provided various ASP resources to LTCFs (eg, antibiotic policy template, guidance documents and standard assessment and communication tools). Data collection included ASP Core Elements, antibiotic starts, days of therapy (DOT), and resident days (RD). The McNemar test, the Wilcoxon signed-rank test, generalized estimating equation model, and the classic repeated measures approach were used to compare the presence of all 7 core elements and antibiotic use during the baseline (2017) and intervention (2018) year. **Results:** In total, 9 trained consultant pharmacists assisted 32 LTCFs with ASP implementation. When evaluating 27 LTCFs that provided complete data, a significant increase in presence of all 7 Core Elements after the intervention was noted compared to baseline (67% vs 0; median Core Elements, 7 vs 2; range, 6–7 vs 1–6; $P < .001$). Median monthly antibiotic starts per 1,000 RD and DOT per 1,000 RD decreased in 2018 compared to 2017: 8.93 versus 9.91 ($P < .01$) and 106.47 versus 141.59 ($P < .001$), respectively. However, variations in antibiotic use were detected among facilities (Table 1). When comparing trends, antibiotic starts and DOT were already trending downward during 2017 (Fig. 1A and 1B). On average, antibiotic starts decreased by 0.27 per 1,000 RD ($P < .001$) and DOT by 1.92 per 1,000 RD ($P < .001$) each month during 2017. Although antibiotic starts remained mostly stable in 2018, DOT continued to decline further (average monthly decline, 2.60 per 1,000 RD; $P < .001$). When analyzing aggregated mean, antibiotic use across all sites per month by year, DOT were consistently lower throughout 2018 and antibiotic starts were lower for the first 9 months (Fig. 1C and 1D). **Conclusions:** Consultant pharmacists can play an important role in strengthening ASPs and in decreasing antibiotic use in LTCFs. Educational programs should be developed nationally to train long-term care consultant pharmacists in ASP implementation.

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Presentation Type:
Poster Presentation

Large-Scale Analysis of Hand Hygiene Frequency Across Healthcare Facilities Varying in Key Hospital Characteristics

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Background: Hand hygiene by healthcare personnel is a critical infection prevention intervention. Direct observation, the most widely utilized method to observe hand hygiene practices, often provides an incomplete picture due to small sample size and altered behavior in the presence of observers. A growing number of healthcare facilities are employing electronic hand hygiene monitoring systems to capture overall compliance rates. These electronic systems can provide a wealth of data on hand hygiene practices within and across healthcare facilities. **Objective:** We used high-accuracy electronic monitoring data to perform a detailed analysis of hand hygiene practices across numerous facilities that varied in key hospital characteristics. **Methods:** In total, 11 tertiary-care facilities were equipped with an electronic hand hygiene monitoring system. Hospitals varied in size, region, area classification (urban vs rural), acuity level, and teaching status. The electronic monitoring system was composed of uniquely assigned employee badges and electronically monitored dispensers. Every recorded dispensing event was time stamped and associated with a specific healthcare worker, the location of the dispenser, and the specific product being dispensed (ie, alcohol-based hand rub [ABHR] or hand soap). The total number of dispensing events for each product type and the total number of hours worked were calculated for each healthcare worker and were used to determine hand hygiene frequency. Hospital attributes, such as size and area classification, were obtained from publicly available sources including but not limited to facility-owned websites and CMS data. **Results:** More than 15.7 million hand hygiene events, performed by nearly 11,000 healthcare workers, were captured by the electronic monitoring system and were included in the analysis. Overall, median hand hygiene frequency was 4.1 events per hour and ranged from 2.0 events per hour to 5.6 events per hour, depending on the facility. ABHR use (median, 3.6 events per hour) was more frequent than handwashing (median, 0.4 events per hour). Hospitals included in the analysis ranged from small (<20 beds) rural facilities to large (>600 beds) academic hospitals and provided a variety of services from general medical-surgical treatment to intensive care. Interfacility differences in observed hand hygiene frequency were analyzed. **Conclusions:** The current analysis reinforces and builds upon previous work that examined a smaller subset of 5 hospitals located in a single geographic region. Combined, these datasets represent >20 million hand hygiene events among ~15,000 healthcare workers from 16 unique healthcare facilities. This analysis provides detailed information about hand hygiene practices across a diverse set of healthcare facilities.

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One Health: Farmworker Perceptions of Antibiotic Resistance and Personal Protective Practices on Wisconsin Dairy Farms

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Background: Antimicrobials are used on dairy farms for preventing disease and treating common infections such as mastitis. **Objective:** We aimed to understand farmworker practices that potentially contribute to transmission of antimicrobial resistance bacteria and their genes (ARG) among

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animals and farm workers, and to identify human behavioral interventions to reduce risk. **Methods:** Focus groups with farm workers were held at 8 dairy farms across Wisconsin selected to represent a range of antibiotic use in cattle. We explored the nature of potentially high-risk practices and farm-worker knowledge and experiences with antibiotic use and resistance. Farm workers were asked to describe common tasks, including hand hygiene and eating practices, and the policies guiding these practices. Focus groups were conducted in English and Spanish guided by the Systems Engineering in Patient Safety (SEIPS) framework, adapted for an agricultural context. Discussions were recorded, transcribed, and translated. A content analysis was conducted to identify themes. Dedoose version 8.0.35 software was used to organize the data. **Results:** In total, 10 focus groups were conducted on 8 farms. Knowledge of when to use antibiotics for human health varied; upset stomach, headache, and flu symptoms were suggested as appropriate uses. Few workers had personal experience with antibiotic resistance at home or on the farm. Some displayed knowledge of the role of antibiotic stewardship in preventing the spread of ARG ("I guess all dairy farmers have a responsibility not to overdo it"). Others associated the risk of spread with the consumption of raw milk or meat from cows receiving antibiotics. Knowledge of personal protective equipment was stronger among workers who commonly reported glove use. Some perceived glove use to be mandatory, and others chose to wear gloves in the perceived absence of written rules. Some workers reported changing gloves numerous times throughout the day, and others did so less frequently or "only when they rip." In general, hand hygiene practices are guided by individual knowledge of established rules, beliefs about risk, and personal discretion. **Conclusions:** Knowledge about mechanisms of spread of ARGs varies among workers on Wisconsin dairy farms and reflects a combination of farm-level rules, experience, individual knowledge, and beliefs. Applying knowledge from the healthcare setting to reduce ARG spread into agriculture is crucial to the tenets of One Health. Programs to reduce ARG spread on dairy farms should focus on proper hand hygiene and PPE use at the level of knowledge, beliefs, and practices.

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Precision Infection Prevention (PIP) as a New Standard of Practice Within Longitudinal Infection Prevention and Surveillance

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Background: Infection prevention and control (IPC) workflows are often retrospective and manual. New tools, however, have entered the field to facilitate rapid prospective monitoring of infections in hospitals. Although artificial intelligence (AI)–enabled platforms facilitate timely, on-demand integration of clinical data feeds with pathogen whole-genome sequencing (WGS), a standardized workflow to fully harness the power of such tools is lacking. We report a novel, evidence-based workflow that promotes quicker infection surveillance via AI-assisted clinical and WGS data analysis. The algorithm suggests clusters based on a combination of similar minimum inhibitory concentration (MIC) data, timing of sample collection, and shared location stays between patients. It helps to proactively guide IPC professionals during investigation of infectious outbreaks and surveillance of multidrug-resistant organisms and healthcare-acquired infections. **Methods:** Our team established a 1-year workgroup comprised of IPC practitioners, clinical experts, and scientists in the field. We held weekly roundtables to study lessons learned in an ongoing surveillance effort at a tertiary care hospital—utilizing Philips IntelliSpace Epidemiology (ISEpi), an AI-powered system—to understand how such a tool can enhance practice. Based on real-time case discussions and evidence from the literature, a workflow guidance tool and checklist were codified. **Results:** In our workflow, data-informed clusters posed by ISEpi underwent triage and expert follow-up analysis to assess: (1) likelihood of transmission(s); (2) potential vector(s) identity; (3) need to request WGS; and (4) intervention(s) to be pursued, if warranted. In a representative sample (spanning October 17, 2019, to November 7, 2019) of 67 total isolates suggested for inclusion in 19 unique