Laboratory Standards Institute (LSI) recommends contamination rates should be <3%, yet our Emergency Department (ED) rate is consistently above this benchmark. Reasons for this are unclear, thus it is imperative to investigate potential risk factors for BCx contamination.

Methods. We performed a retrospective case-control risk factor analysis of patients with BCx contamination at our ED between 2014 and 2018. Contaminated BCxs were identified by the microbiology laboratory per American Society of Microbiology recommendations. Demographics, comorbidities, and clinical characteristics were evaluated in patients with false-positive/contaminated BCxs (cases) and patients with negative BCxs (controls). Potential risk factors identified in univariate analysis were included in a logistic regression model. Unadjusted and adjusted analyses were performed using SAS 9.4.

Results. 25,668 BCxs from 13,782 patients were included in analysis. 20,907 BCxs from 11,266 (82%) patients were negative, 2,856 BCxs from 1,504 (11%) patients were true positives, and 1,905 BCxs from 1,012 (7%) patients were contaminated. Yearly ED contamination rates ranged from 5.0–9.3%. Collector contamination rate varied, though 38 (18%), 75 (35%), and 7 (3%) of 209 collectors had a contamination rate >3%, ≥ 10%, and < 20%, respectively. Significant patient-specific risk factors identified in univariate analysis are listed in the attached table along with adjusted analysis.

Conclusion. In our analysis, we identified that older age, African American race, higher BMI, COPD, paralysis, and presenting in septic shock independently increase risk of having a contaminated BCx. Difficulty obtaining venipuncture in patients with these risk factors, often requiring multiple collection attempts, likely leads to decreased sterile technique. It is imperative to have a process assuring sterile technique in these high-risk individuals to minimize consequences associated with having a false-positive BCx result in these high-risk patients. Additionally, variable collector contamination rates seen in this study highlight the necessity for frequent technique in-service training.

Disclosures. All authors: No reported disclosures.

2014. Assessment of Cost, Morbidity, and Mortality Associated with Blood Culture Contamination

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Session: 235. Antibiotic Stewardship: Diagnostics and Diagnostic Stewardship
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Background. Blood cultures are the primary diagnostic tool for bloodstream infections, but accuracy of results is dependent on collection technique. Decreasing BC contaminations is a priority for antimicrobial stewardship programs as false positives can expose patients to adverse effects of unnecessary antibiotics. In this study, we present an analysis comparing clinical outcomes and cost associated with false-positive and true negative blood cultures at our institution.

Methods. We conducted a single-center, retrospective, case-control study in patients admitted following blood culture collection in the emergency department from 2014 to 2018. Demographic and clinical characteristics were evaluated in patients with false-positive BC cultures (cases) and negative BC cultures (controls). Contaminants were identified per American Society of Microbiology recommendations. Clinical outcomes were compared between cases and controls, and adjusted analyses were performed with logistic regression, linear regression, and generalized linear models controlling for age, race, body mass index, and sepsis. Statistical analysis was performed using SAS 9.4.

Results. A total of 1,102 cases and 11,266 controls were included in analysis. All clinical outcome measures were significantly higher in patients with contaminated blood cultures (see table). Select clinical outcomes remained significant when controlling for potential confounders.

Conclusion. To the best of our knowledge, this is the largest study evaluating the clinical and financial impact of blood culture contamination with inclusion of >1,000 cases during a 5-year period. Our study shows that blood culture contamination is associated with increased length of stay, unnecessary exposure to antibiotics and procedures, development of antibiotic-associated adverse events, and higher hospital charges as reported in smaller studies. However, this study is the first to the best of our knowledge reporting increased mortality associated with blood culture contamination. Implementation of innovative strategies to reduce contamination should be pursued. Antimicrobial stewardship programs should prioritize identification of contaminants and rapid de-escalation of inappropriate antibiotics in these patients to improve patient care.

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2015. Minimal Impact of Blood Culture Contaminants on Patient Care Decisions May Limit Cost-Effectiveness of Interventions to Reduce Contamination Rates

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Background. High blood culture (BC) contamination rates have been associated with increased healthcare cost, antimicrobial use, and extended length of stay. Interventions using blood culture diversion devices (BCDD) reduce contamination rates, but often increase equipment costs compared with benchmark techniques. Cost savings will only be achieved, therefore, if contaminated BCs do in fact lead to expensive care decision. The purpose of this study was to define the actual impact of contaminated BCs on patient care as a means of determining the cost-effectiveness of implementing BCDD at our institution.

Methods. A retrospective review of all contaminated BCs collected in our Emergency Department (ED) from July 2018 to December 2018 was completed. Data included antimicrobial therapy, admission status, laboratory orders, and co-morbidities for patients with contaminated cultures, as defined by the College of American Pathologist (CAP). were recorded. Laboratoy costs included rapid molecular assays performed for patients admitted from the ED, as well as technologist effort and media costs for BC work-up.

Results. During this study period, out of a total of 4,176 blood draws, there were 1,102 BCs (26.8%) that met the CAP definition of contamination. Of all contaminated cultures, only 12.7% (n = 15) of patients were treated because of a positive BC, while 68.6% were given antibiotics due to other comorbidities; A total of 22 patients (18.6%) did not receive any antibiotics during the encounter. The most common therapy for treated patients was vancomycin (14/15, 93.34%) for an average of 5.2 days. Patients with contaminated BCs were admitted to the hospital because of a positive result; 92.3% of patients with contaminated BCs were admitted, however, for a different diagnosis. Based on average treatment and laboratory costs, the total costs for contaminated patients were estimated at $170 USD.

Conclusion. Contamination of BCs collected in the ED does not routinely lead to antimicrobial therapy or hospital admissions at our institution. This minimal impact of BC contaminants on patient care decisions and healthcare costs limits the cost-effectiveness of implementing BCDD at our institution.

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2016. Antibiotic Misuse of Rural Residents and Pilot Project of Antibiotic Take-Back Program

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Session: 236. Antibiotic Stewardship: Global
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Background. Self-medication with antibiotics (SMA) is a major form of antibiotic misuse behaviors contributing to increasing antimicrobial resistance (AMR). The main source of SMA usually comes from in-home leftover antibiotics which usually are not used or expired. Therefore, an antibiotic take-back program (ATPB) is urgently needed.

Methods. A pilot ATBP was launched in Liantang Village, Zhejiang Province from January to March, 2019. A total of 50 households were randomly selected for the baseline survey. A questionnaire was used to investigate their knowledge and antibiotic use behaviors. Health education leaflets and posters were distributed to each household. A pilot Wechat group was set up for health communication. Residents were encouraged to hand over those unused or expired antibiotics at home to the village clinic for re-disposal. The ATBP was implemented for 30 days. The type, name and amount of antibiotics were collected as after intervention data.

Results. All of 50 households finished the questionnaire. Although 27 (52.9%) agreed that keeping antibiotics at home would potentially increase risk of SMA, there were still 32 (64.0%) residents reported that they kept antibiotics at home and 25 (49%) residents indicated that their leftover antibiotics usually disposed as household waste. After the 30-day intervention, 10 (20.0%) households handed their in-home antibiotics or medicine to the village clinic. In total, 32 boxes of medicine including 17 (53.1%)
boxes of antibiotics were recycled. All of 32 boxes of medicine could be classified into 19 specific types, of which there were 8 (42.1%) types of antibiotics, belonging to four broad categories: Cephalosporins, Penicillins, Macroline, and Nitroimidazoles. In addition, there were also antifungal drug, antiviral agent, anti-inflammatory drug, and paracetamol tablets handed over by the villagers as antibiotics.

**Conclusion.** Utilizing leaflets and social media to promote health education can reduce the risk of keeping antibiotics at home. Rural residents could not identify commonly used antibiotics even after health education. To conduct a broader intervention to recycle antibiotics, further study needs to focus on improving the antibiotic identification among the rural residents.

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

**2017. Age-specific Distribution of Antimicrobial Days of Therapy (DOT) Using National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB Japan): Comparison with Defined Daily Doses per 1,000 Inhabitants Per Day (DID)**

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**Background.** Nationwide surveillance of antimicrobial use (AMU) is often assessed by defined daily doses per 1,000 inhabitants per day (DID) as a measurement. We previously reported the age-specific distribution of AMU using National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB Japan), which archives e-claim big data (Infection. 2018 46:207–214). The estimated AMU assessed by DID could be underestimated in patients with diminished renal function and in pediatric patients. Our objective was to analyze days of therapy (DOT) using NDB and to evaluate its utility by comparing with DID.

**Methods.** The DID value was calculated by the same method in our previous study. The DOT values was extracted from data in NDB and were standardized by a study. The DOT values was extracted from data in NDB and were standardized by a

**Results.** The total DID (oral, parental) from 2013 to 2016 in three age groups was shown in the following table. The total DID (oral, parental) in three age groups in 2016 were 16.31, 0.27 in the children, 12.82, 0.39 in productive age, and 15.91, 2.13 in elderly, respectively. The total DOT/DOID (oral, parental) in three age groups in 2016 were 0.45, 0.23 in the children, 0.78, 0.49 in productive age, and 0.68, 0.59 in elderly, respectively. The gap between DID and DOTID in children was much larger than that of other age groups regardless of dosage form, suggesting that AMU assessed by DID could be underestimated, especially in children. The gap between DID and DOTID in children was much larger than that of other age groups regardless of dosage form, suggesting that AMU assessed by DID could be underestimated, especially in children. 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