Conclusion. An MRSA surveillance and prevention strategy in VA may have prevented a substantial number of MRSA and GNR infections. The savings associated with the prevented infections helped to offset some but not all of the cost of the initiative. Economic evaluations of these interventions can help decision makers understand the trade offs between increased cost and improved health that can come from such interventions.

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1210. Staphylococcal Acute Post-Operative Prosthetic Joint Infection (PJI) Treated With "DAIR" (Debridement and Implant Retention) and Impact of Rifampin: A Retrospective Cohort Study in France

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Session: 137. Healthcare Epidemiology: MSSA, MRSA and Other Gram Positive Infections

Friday, October 5, 2018: 12:30 PM

Background. Staphylococci are the most frequent bacteria in PJI. In patients with acute PJI (i.e., <1 month following the implantation), DAIR with exchange of removal components followed by a combination of antibiotics including rifampin (RMP) (particularly RMP + fluoroquinolone) are recommended. Unfortunately, some patients could not receive RMP due to drug–drug interaction or stopped it due to an adverse event. Finally, it is unclear whether the dose and the duration of RMP influenced the prognosis.

Methods. Retrospective cohort study in four hospitals including patients with staphylococcal acute post-operative PJI treated with DAIR in 2011–2016. Univariate and multivariate Cox analysis and Kaplan–Meier curves were used to determine the risk factors for treatment failure.

Results. Seventy-nine patients were included (median age: 71 years [IQR 53–89]; 55 men [69.6%]; median ASA score: 2 [IQR 2–3]). Cultures revealed 65 (82%) *S. aureus* and 15 (19%) coagulase negative staphylococci infections, including 14 methicillin-resistant strains (18%). Among all isolates, only two (3%) were resistant to RMP and 16 (20%) were resistant to fluoroquinolone. The median duration of antimicrobial therapy was 92 days (IQR 31–152). Only 59 patients received RMP (75%), and 35 (44%) the combination RMP + fluoroquinolone. Median duration of RMP was 57 days (IQR 16–86) and median dose 14.6 mg/kg/d (IQR 13–17). Forty patients (51%) received RMP in the first 2 weeks and 43 patients (54%) received at least 2 weeks of RMP. Six patients (8%) developed an adverse event leading to RMP interruption. During a median follow-up of 443 days (IQR 220–791), 21 patients (27%) experienced a treatment failure including 12 persistence of the initial pathogen (57%) and nine superinfections (43%). An ASA score >2 (OR 2.8; 95% CI 1.26–6.15), the use of RMP (OR 0.4; 95% CI 0.71–0.95) and the duration of RMP treatment (OR 0.83; 95% CI 0.75–0.92 per week of treatment) were significant determinants of the outcome (but not methicillin-resistance). Receiving >2 weeks of RMP prevented the failure, but an introduction during the first 2 weeks did not influence the outcome.

Conclusion. In patients with staphylococcal acute PJI, the use of RMP and its duration strongly influenced the prognosis. As 25% of patients could not receive RMP, new drugs with anti-biofilm activity are required.

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

1211. Increasing Incidence of Invasive Methicillin-Resistant and Methicillin-Sensitive *S. aureus* Infections Among Persons Who Inject Drugs, 2014–2017

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Session: 137. Healthcare Epidemiology: MSSA, MRSA and Other Gram Positive Infections

Friday, October 5, 2018: 12:30 PM

Background. In 2011, persons who inject drugs (PWID) were estimated to be 2.6% of the US population 13 years of age and older. Infectious endocarditis (IE) and hepatitis C infections among PWID are increasing. We describe trends in invasive *Staphylococcus aureus* (iSA) infections among PWID.

Methods. Population-based surveillance for invasive (from normally sterile site) methicillin-resistant *S. aureus* (MRSA) and methicillin-sensitive *S. aureus* (MSSA) has been conducted in Monroe County, NY (2010 Census population: 744,344) as part of the CDC's Emerging Infections Program since September 2014. Cases are county residents with an iSA infection; iSA incidence was calculated as cases/100,000 census population.

Results. During September 2014–August 2017, 1,460 iSA cases were identified; 150 (10%) in PWID. The incidence of PWID-associated iSA doubled among 18–49 year olds during years 1–3 (Table 1). The proportion of cases occurring in PWID increased among both MRSA (7% to 20%) and MSSA (6% to 11%). PWID were significantly younger ($P < 0.0001$) than noninjection drug users, and more often White ($P = 0.003$) and non-Hispanic (p = 0.004). Among PWID with iSA, 45% had IE. Almost all PWID with iSA used other illicit drugs ($n = 112$, 91% of 123 unique cases); 89% (110) were smokers, and 46% (56) had chronic liver disease. PWID with iSA had a longer mean length of stay (26 days [SD 22] vs. 21 [37], $P = 0.01$); PWID with MRSA were more likely to have septic shock (22% vs. 8%, $P = 0.03$) and pneumonia (9% vs. 1%, $P = 0.04$) when compared with PWID with MSSA. Among iSA, a history of recurrent skin abscess/boil (24% vs. 8%, $P = 0.02$) was more common in PWID with MRSA; fewer PWID with MRSA were obese (2% vs. 15%, p = 0.02).

Conclusion. The increasing incidence of invasive MRSA/MSSA among PWID, frequently accompanied by concurrent chronic liver disease, polysubstance use, and need for extended hospital stays, poses an increasing challenge to the public health and clinical communities. This highlights the critical need to prevent worsening of the epidemic of injection drug use and provide comprehensive treatment for individuals engaging in highest risk drug-related behaviors.

Table 1. Incidence (per 100,000 County Residents) of PWID-Associated iSA by Age Group

Year	18–49 Years	50–64 Years	65–84 Years	Total
1 (September 1, 2014–August 31, 2015)	7.1	5.4	1.2	4.3
2 (September 1, 2015–August 1, 2016)	13.9	5.4	1.2	7.3
3 (September 1, 2016–August 31, 2017)	16.4	5.4	3.5	5.6

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

1212. Whole Genome Sequencing for High-Resolution Methicillin-Resistant *Staphylococcus aureus* Outbreaks Tracing in Neonatal Intensive Care Units and *In silico* Resistance and Virulence Markers Detection

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Session: 137. Healthcare Epidemiology: MSSA, MRSA and Other Gram Positive Infections

Friday, October 5, 2018: 12:30 PM

Background. The French National Reference Center for Staphylococci used whole genome sequencing (WGS) to investigate outbreaks due to a virulent MRSA clone containing the toxic shock syndrome toxin-1 (TSST-1+, sequence type 5, Geraldine clone) increasingly reported in neonatal intensive care units (ICUs).

Methods. We analyzed 48 isolates previously characterized by *spa* typing: 31 isolates from outbreak 1 (infected or colonized patients, healthcare workers carriage and environment), 12 isolates from four distinct outbreaks (2, 3, 4, and 5) that occurred in geographically independent neonatal ICUs, and five sporadic strains. We performed WGS using a *de novo* assembly approach to perform comparisons between isolates (EpiSeq®, bioMérieux). A phylogenetic analysis was constructed by comparing single nucleotide variations (SNVs) in 2020 core-genes using a cutoff of 40 SNVs for defining isolates belonging to the same transmission cluster. We detected *in silico* resistance and virulence markers using the same bioinformatic pipeline.

Results. For outbreak 1, 25/31 isolates with two distinct but related *spa* types t002 and t111 were highly related (<13 SNVs), suggesting the transmission of the same strain; 6/31 isolates were genetically distinct (>80 SNVs) from the previous cluster of 25 isolates suggesting their origin from separate sources. Interestingly the three isolates of outbreak 2 with a *spa* t111 differed by less than 22 SNVs from the main cluster of the 25 isolates of outbreak 1. This suggested origin from the same transmission cluster. The other three outbreaks showing respectively a *spa* t002 for outbreak 3 and outbreak 4 and a *spa* t045 for outbreak 5 were not affiliated to the main cluster of outbreak 1. The isolates carry numerous virulence factors (including TSST-1) and resistance markers confering a peculiar antibiotic resistance profile to the Geraldine clone.

Conclusion. WGS provides the resolution power to reveal unsuspected transmission events not indicated by conventional methods (different *spa* type). Based on its high resolution WGS is an all in one tool for epidemiology, virulence and resistance analysis. It really transforms outbreak management and infection control practice for an early response and should replace conventional methods for detection of MRSA transmission.

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1213. Evaluation of an Alcohol-Based Antiseptic for Nasal Decolonization of Methicillin-Resistant *Staphylococcus aureus* (MRSA)

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