**Conclusion.** Patients with *S. aureus* AHOAI with a delay in source control, slow decline in CRP, prolonged fever or ICU admission are at higher risk of OC. While nonspecific, these findings suggest that such patients may warrant especially cautious clinical follow-up to identify sequelae early. Large multicenter studies are needed to better predict OC in this setting.
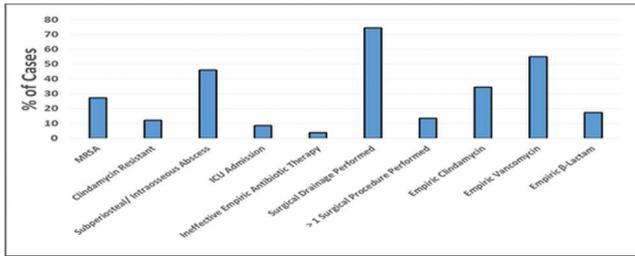
Disclosures. All authors: No reported disclosures.

920. A Sharp Fall in Antibiotic Use in Infants Is Correlated With a Population-Wide Reduction in Asthma Incidence for Children Under 5

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Background. Antibiotic use in infants <1 is associated with increased relative risk (~1.5) for childhood asthma in cohort studies. This may be mediated by removal from the infant microbiome of organisms shown to protect against asthma, a hypothesis supported by experiment. We launched this study to see whether reductions in antibiotic use at population level are associated with benefit by way of asthma reduction.

Methods. We obtained antibiotic prescribing data from BC PharmaNet, a population-based database that captures all outpatient prescribing for British Columbia, Canada (*n* = 4.7 million). We focused on prescriptions in children <1 and calculated prescription rate per 1,000 population per year. We obtained asthma incidence data from the BC Ministry of Health Chronic Disease Registry. Asthma case identification uses a standard case definition making use of community and hospital diagnostic codes as well as asthma drug data from BC's universal physician billing, hospital and drug databases. We focused on age-stratified asthma incidence for children aged 1–4. The correlation between antibiotic prescription rate in children < 1 and asthma incidence in the following year was estimated using the Spearman test.

Results. Antibiotic prescribing for all age groups fell 9.5% between 1999 and 2013. The rate for infants <1 dropped 58% from 1,014 to 427 prescriptions per 1,000 population/year. Between 2000 and 2014, asthma incidence (ages 1–4) fell 26% from 27.3 (95% CI: 26.5–28.0) to 20.2 (95% CI: 19.5–20.8) per 1,000 population/year. These trends were strongly correlated: Spearman's rho = 0.81 (*P* = 0.0002). The magnitude of fall in asthma incidence is slightly greater than that predicted based on calculated population attributable risk for antibiotic exposure.

Conclusion. The population health benefit from antibiotic stewardship in infants may not be confined to slowing the emergence of resistance and could include a reduced risk of asthma. As this is a population-based ecological study, a reduction in other risk factors may also have contributed to the fall in asthma incidence. This promising trend should be further studied at individual level within a large cohort study.

Antibiotic use among children <1 year and asthma incidence among children 1-4 years in BC, 1999-2014
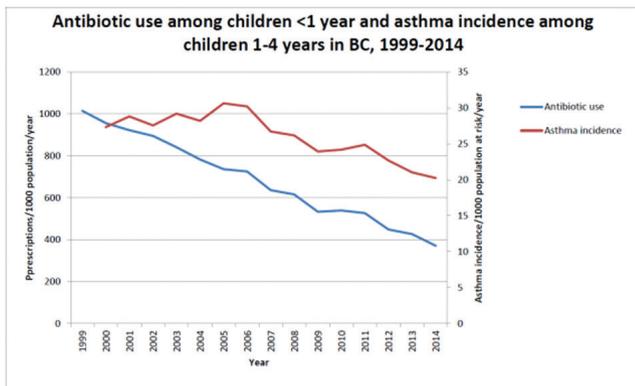
Disclosures. All authors: No reported disclosures.

921. Antibiotic Prescribing for Children in Family Medicine Clinics Within a Practice Research Network

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Background. Family medicine clinics provide care for one-third of US children, yet comprehensive data about antibiotic prescribing in this patient population are lacking. We aimed to characterize antibiotic prescribing for children in family medicine clinics.

Methods. A retrospective cohort of patients aged 0–17 years with a visit to a family medicine clinic within the Washington, Wyoming, Alaska, Montana, and Idaho (WWAMI) Region Practice and Research Network (WPRN) from January 1, 2014 to April 30, 2017 was studied. Patients with complex chronic conditions were excluded. We defined narrow-spectrum antibiotics as penicillin, amoxicillin, first-generation cephalosporins, sulfonamides, and nitrofurantoin; and broad-spectrum antibiotics otherwise. On the basis of national guideline recommendations and a previously published hierarchical classification system, we assigned diagnoses to one of the 3 tiers: diagnoses for which antibiotics were (1) almost always indicated (e.g., bacterial pneumonia), (2) may be indicated (e.g., pharyngitis), and (3) generally not indicated (e.g., bronchiolitis/bronchitis).

Results. We studied 20,779 pediatric patients with 97,228 clinic visits. Oral antibiotics were prescribed in 10,922 (11%) of all encounters. The median rate of antibiotic prescribing among providers was 14% (interquartile range: 4.9%–18.5%). Of all antibiotics prescribed, 51% were broad-spectrum agents. Acute respiratory tract infections (ARTIs) accounted for 67% of all antibiotics prescribed. Of the antibiotics prescribed for ARTI, 25% were for diagnoses where antibiotics are generally not indicated. First-line guideline-recommended antibiotics were prescribed in 80% of acute otitis media, 80% of sinusitis, 68% of pharyngitis, and 31% of community acquired pneumonia diagnoses. Azithromycin monotherapy was prescribed in 52% of community acquired pneumonia diagnoses.

Conclusion. Specific targets for improving antimicrobial prescribing within a family medicine practice research network include prescribing of broad-spectrum antibiotics (particularly azithromycin), prescribing for conditions where antibiotics are not indicated, and first-line guideline-recommended prescribing for pharyngitis and community acquired pneumonia.

Disclosures. All authors: No reported disclosures.

922. Barriers to Pediatric Staff Nurse Participation in Antimicrobial Stewardship Programs (ASP) Linked to Organizational Culture

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Background. Increasing nurse engagement in Antimicrobial stewardship programs (ASP) is a national initiative. We previously reported results from a stewardship survey where nurses indicated being confident to perform ASP practices, yet identified barriers to stewardship participation. Seventeen barriers were identified, with many centered around hospital culture such as lack of inclusion in rounds, power differentials, and nurse input not actively sought. To further understand organizational and cultural barriers which may influence nursing stewardship engagement, we used responses from the Agency for Healthcare Research and Quality (AHRQ) Patient Safety survey to evaluate nursing perception on hospital culture.

Methods. Data from the 2017 AHRQ survey were used. Nurses working on non-inpatient floors (e.g., post anesthesia care units) were excluded. For this analysis, we included 4 domains pertinent to stewardship initiatives: communication, information exchange, teamwork within and across units. Composite scores within each domain were calculated. Scores were stratified by Intensive Care Nursery (ICN), Pediatric Intensive Care Unit (PICU), Oncology (Onc), medical-surgical (med-surg) units, and dual units (e.g., float pool).

Results. A total of 424 nurses participated in the survey; 138 (33%) ICN, 90 (21%) PICU, 42 (10%) Onc, 168 (40%) med-surg, and 23, (5%) dual. The majority of nurses had been employed by the hospital for 0–5 years (237; 56%) with 76 (18%) having more than 15 years. The majority of nurses expressed neutrality with communication. Approximately 20% disagreed with the level of information exchange. Nurses perceived teamwork within a unit more favorably than teamwork across units. Responses were relatively consistent across units.

Conclusion. Successful ASP require interdisciplinary collaboration and communication. Barriers related to communicating and exchanging information may limit nursing engagement. Assessments already used at hospitals could potentially guide methods of integrating nurses into stewardship with AHRQ data offering another lens to assess factors influencing behaviors to steward. A thorough understanding of nurses' perceived work climate may inform engagement strategies.
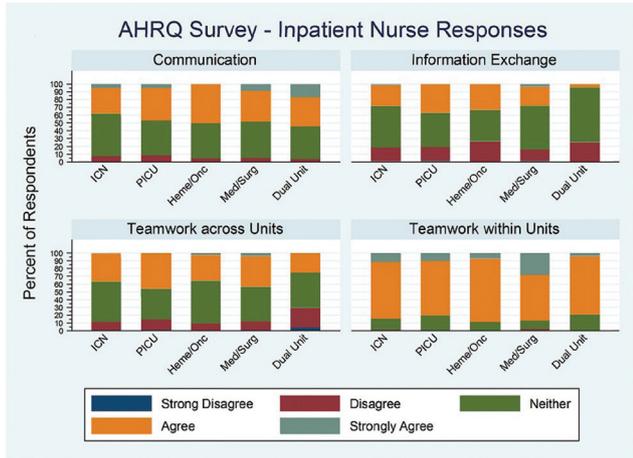
AHRQ Survey - Inpatient Nurse Responses

923. Rapid Emergence of *Candida auris* in the Chicago Region

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Background. In 2016, *Candida auris* was first reported in the United States, with 2 Illinois patients among the first cases. In response, the state and 3 Chicago-area health departments (HDs) investigated clinical cases and performed point prevalence surveys (PPSs) to identify colonized cases.

Methods. Clinical cases had positive *C. auris* cultures obtained for clinical care; colonized cases had positive surveillance cultures during PPSs. In August 2016–January 2018, PPSs were performed in Chicago-area acute care hospital (ACH) intensive care units, long-term acute-care hospitals (LTACHs), and high-acuity floors of skilled nursing facilities (SNFs) and SNFs caring for ventilated patients (vSNFs). Facility and HD staff obtained composite axilla/groin swabs from assenting patients to detect colonization. Facilities with an epidemiologic link to a clinical case or a shared patient population with a facility housing a clinical case were prioritized for PPSs.

Results. During May 2016–January 2018, Chicago-area facilities reported 24 clinical cases, including 10 bloodstream infections. HDs performed 33 PPSs at 20 facilities (5 ACHs, 5 LTACHs, 3 SNFs, and 7 vSNFs) during August 2016–January 2018. Of 1,364 patients screened, 92 (6.7%) were colonized with *C. auris*; 10 (50%) facilities had ≥1 colonized patient. A significantly higher proportion screened positive from September 2017 to January 2018 (84/822, 10.2%) than in August 2016–August 2017 (8/542, 1.5%; z-test $P < 0.01$). Prevalence of *C. auris* colonization was highest in vSNFs (median: 7.7%; range: 0%–43.3%), compared with ACHs (0%; 0%–6.3%), LTACHs (0%; 0%–14.3%), and SNFs (0%, 0%–1.5%). PPSs in vSNFs identified 91% (84/92) of colonized cases. Among 5 vSNFs with repeat PPSs, 4 had higher prevalence on repeat screening (median: 26.1%; range: 0%–43.3%) than at baseline (1.2%; 0%–17.0%).

Conclusion. *C. auris* has rapidly emerged in the Chicago area. Increasing prevalence of *C. auris* colonization during repeat PPSs indicates transmission and amplification within vSNFs. To prevent spread, state and local HDs provided infection control recommendations, disseminated health alerts, and recommended placing vSNF patients from high-acuity floors on transmission-based precautions.

924. Incidence of Symptomatic and Asymptomatic Influenza Among Healthcare Workers: A Multicenter Prospective Cohort Study

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Background. Influenza is an important cause of viral nosocomial infections; however, the incidence of asymptomatic influenza among healthcare workers (HCWs) is poorly known. The objective was to estimate the cumulative incidence of asymptomatic and symptomatic influenza among HCWs.

Methods. The AFP (Asymptomatic Influenza Project, NCT02868658) multi-center prospective cohort study was conducted in 5 French university hospitals in Lyon (2 sites), Grenoble, Saint-Etienne, and Dijon. Each voluntary HCW was followed-up during the entire 2016–2017 influenza season with 3 visits for influenza diagnostic by PCR from nasal swabs and serology. The outcome was laboratory confirmed influenza (LCI) defined by an influenza detection by PCR, and/or influenza A seroconversion/ significant increase in the anti-A antibodies titer against A/Hong-Kong/4801/2014, with the absence of seroconversion/significant increase in the level of anti-B/ Brisbane/60/2008 antibodies; influenza A was indeed the only strain circulating this winter in the Lyon area. Asymptomatic cases presented no general or respiratory sign/ symptom, paucisymptomatic LCI cases had those symptoms/signs but not conforming to clinical influenza, symptomatic LCI cases had temperature ≥37.8°C and cough or sore throat. Cumulative incidence was expressed per 100 HCWs.

Results. Overall 278 HCWs were analyzed, 84.2% were female, the mean age was 38 years, and influenza vaccination coverage in 2016–2017 was 45.3%. Globally, 62 HCWs had evidence of LCI. Among laboratory confirmed influenza cases, 67.7% (95% CI: 55.8%–79.7%, n = 42) were asymptomatic, 21.0% (95% CI: 10.5%–31.4%, n = 13) were paucisymptomatic, and 11.3% (95% CI: 3.2%–19.4%, n = 7) were symptomatic. Among HCWs, global cumulative influenza incidence was 22.3% (95% CI: 17.7%–27.5%). Cumulative incidence of asymptomatic influenza was 15.1% (95% CI: 10.9%–19.3%), it was 4.7% (95% CI: 2.2%–7.2%) for paucisymptomatic influenza, and 2.5% (95% CI: 0.1%–4.4%) for symptomatic influenza.

Conclusion. Asymptomatic influenza is frequent among HCWs, representing two-third of the influenza burden in this population. This highlights the importance of infection control measures among HCWs no presenting influenza symptoms.

925. Healthcare-Associated Legionnaires' Disease, California, 2015–2017

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Background. Legionnaires' disease (LD) causes significant morbidity and mortality to hospital patients and residents of skilled nursing facilities (SNF). In California, LD is reportable to local health departments via the California Reportable Disease Information Exchange (CalREDIE) surveillance system. Cases are classified as suspected or confirmed using Centers for Disease Control and Prevention (CDC) definitions. The California Department of Public Health (CDPH) Healthcare-Associated Infections (HAI) Program maintains a database of healthcare-associated (HA-LD) and consults with local public health departments for single cases and outbreaks.

Methods. We described characteristics of confirmed HA-LD cases in 2015–2017. We classified HA-LD as definite if patient had continuous exposure in a facility for 2–10 days prior to symptom onset and possible if patient had overnight exposure in a facility for a portion of 2–10 days prior to symptom onset.

Results. From 2015 to 2017, 125 (8%) of 1,554 confirmed LD cases were HA-LD. Of these, 73 (58%) were definite HA-LD and 52 (42%) were possible HA-LD. The majority of HA-LD cases (N = 99, 79%) occurred in southern California. SNF were associated with 57 cases (46%) and hospitals with 44 cases (35%); 23 cases (18%) had exposures in both SNF and hospitals during the incubation period. Among the definite HA-LD cases, 50 cases (68%) had exposures in a single SNF. The median age of patients with HA-LD was 77 years. The HAI Program consulted with 15 local public health agencies on 33 HA-LD investigations, including 7 outbreaks and 26 single-case investigations.

Conclusion. HA-LD represented a small but important percentage of LD in California; the majority occurred in SNF. To prevent HA-LD, California hospitals and skilled nursing facilities should implement water management programs, as recommended by CDC and required by the Centers for Medicare and Medicaid Services (CMS) since June 2017. Public health agencies should respond rapidly to investigate HA-LD cases and control outbreaks.