Results. After review of 8361 articles as of January 31, 2019, we identified 26 studies which contained 39 unique CAP estimates. Among adults ≥65 years of age, annual rates of hospitalized CAP ranged from 847 to 3,500 per 100,000 persons with median = 1,830. Rates were lower in studies that excluded patients with healthcare-associated (but community-onset) pneumonia (HCAP; median = 2,003 vs. 1,286; P = .02) or immunocompromising conditions (median = 1,895 vs. 1,409; P = .29). Rates of CAP were also lower in studies that used more restrictive criteria for diagnosing pneumonia (e.g., pneumonia coded in any diagnosis position [median = 2,246] vs. pneumonia coded in the first position only [median = 1,375] in studies of administrative claims; P = 0.03). For adults <65 years of age, annual rates of CAP were lower (range = 89 to 1,024 per 100,000; median = 210).

Conclusion. CAP causes a significant disease burden among adults, particularly among those ≥65 years of age where the incidence of hospitalization is approximately 2,000 per 100,000 annually. Commonly-applied exclusion criteria (e.g., persons with HCAP or immunocompromising conditions) or restrictive case definitions (e.g., only including pneumonias coded in the primary diagnosis position) have led to systematic underestimation of CAP incidence in many previous studies. Understanding the true burden of adult CAP is critical for highlighting the ongoing need for expanded prevention programs, including vaccination.

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

1614. Single-Dose Doxycycline as Lyme Disease Post-Exposure Prophylaxis in a National Commercial Insurance Claims Database—the United States, 2014–2017

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Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. Approximately 300,000 cases of Lyme disease occur annually in the UNITED STATES, with children aged 5–9 years disproportionately affected. A single dose of doxycycline administered within 72 hours of a high-risk tick bite is recommended for post-exposure prophylaxis (PEP) to prevent Lyme disease in areas of high incidence. However, it is not known how often or for which patients PEP is used. We aimed to describe recent patterns of single-dose doxycycline medication claims in states with high and low Lyme disease incidence, and the associated patient and prescription characteristics in a large national commercial insurance claims database.

Methods. Outpatient medication claims in the IBM Watson Health MarketScan Database®, a large nation-wide database of de-identified insurance claims filed between January 1, 2014–December 31, 2017 were reviewed. Claims of single-dose doxycycline were identified and associated patient demographics and medication characteristics were analyzed.

Results. During 2014–2017, 66,210 medication claims for single-dose doxycycline were filed by 63,112 enrollees; mean annual incidence of receiving at least one single-dose doxycycline prescription was 56 per 100,000 enrollees. Mean patient age was 43 years (IQR 33–56 years); only 8% were for children aged <18 years. About half (46%) were male patients. Most claims (71%) were made by patients residing in the 14 states with high Lyme disease incidence, defined as an average annual incidence of ≥ 10 confirmed Lyme disease cases per 100,000 population. The majority (80%) of medication claims were during the 6 months of peak tick activity (April–July for nymphal ticks and October–November for adult ticks).

Conclusion. Single-dose doxycycline medication claims are common in states with high Lyme disease incidence and are highest during months of peak tick activity, consistent with the assumption that most single-dose doxycycline is used for Lyme disease PEP. Use of single-dose doxycycline to prevent Lyme disease is infrequent in children, despite being a group at high risk for Lyme disease. Efforts to educate pediatric healthcare providers and parents should be made to increase Lyme disease PEP access for children.

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

1615. Influenza Outbreaks in Long-Term Care Facilities, 2017–2018 Influenza Season, Dallas, Texas

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Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. High rates of influenza-related hospitalizations and deaths occurred in the United States during the 2017–2018 influenza season. A record number of influenza outbreaks were reported in long-term care facilities (LTCF) in Dallas County. Public health surveillance of influenza-related intensive care unit (ICU) admissions and deaths in acute care hospitals improved early identification of outbreaks in LTCFs.

Methods. A confirmed LTCF influenza outbreak was defined as at least 1 lab-confirmed influenza case plus at least 1 case of influenza-like illness among residents or staff within 72 hours. Outbreaks were self-reported by facilities or identified by the health department during investigations of ICU hospitalizations and deaths. CDC guidance for influenza outbreak management was provided and daily active surveillance was continued for at least 1 week after the last case was identified. Data collected included: numbers of ill residents and staff, vaccination rates, dates of illness and chemoprophylaxis initiation, hospitalizations and deaths. Fisher exact tests and Chi-square were performed using SAS 9.4.

Results. During this influenza season, 32 confirmed influenza outbreaks were identified in Dallas County LTCFs: 17 in skilled nursing facilities (SNF), 13 in assisted-living facilities (ALF) and 2 in hybrid SNF/ALF. The average attack rate in residents was 9.8% (range: 1–35%). Influenza hospitalization rates were higher in ALF compared with SNF outbreaks (OR: 2.2). Influenza-associated mortality rates were higher in ALF compared with SNF (OR: 3.1). Of the 32 outbreaks, 20 (63%) were self-reported by facilities to public health and 12 (38%) were identified through health department review of influenza-associated ICU hospitalizations. Facilities where outbreak cases were identified through public health surveillance of ICU admissions had significantly lower overall attack rates (5.9% vs. 12.1%, $P = 0.01$) and shorter time to initiation of facility-wide chemoprophylaxis (0.4 vs. 2.4 days, $P = 0.05$).

Conclusion. Active surveillance of influenza-associated ICU admissions in acute-care hospitals facilitated the early identification of influenza outbreaks in LTCFs, which was associated with lower overall attack rates and shorter time to initiation of facility-wide chemoprophylaxis.

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

1616. Confronting Measles: The View from a New York City Health System at the Center of the Outbreak

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Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. A measles outbreak was identified in NYC in October, 2018. Over 430 cases have been confirmed to date, mostly in under-vaccinated children. Due to referral patterns, our health system provided care to a large number of these patients in the ambulatory, Emergency Department and inpatient settings, placing significant pressure on Infection Prevention and Control efforts. Our response utilized the engineering, administrative, protective equipment and educational hierarchy of controls to prevent transmission to patients, visitors and staff.

Methods. Patients residing from outbreak zip codes were flagged in our electronic medical record. Screening for symptoms, measles exposure, vaccine opportunities and education were provided when patients presented for care. Enhanced controls for premature infants and immunocompromised patients were enacted. Automated emails to providers caring for patients from the outbreak area served as reminders to consider measles in differential diagnosis. As most cases of measles occurred in children, special effort was taken to prevent transmissions in pediatrics. Patient rooms on multiple inpatient floors were converted to negative pressure with respect to corridor, as admitted patients developed symptomatic (contagious) illness while hospitalized. We limited all nonimmune visitors <5 years from entering inpatient units. Patients were contacted prior to ambulatory visits, procedures, and surgery to ensure patients from outbreak zip codes were triaged appropriately. Automated alerts to Infection Control when measles testing was ordered allowed timely implementation of prevention measures and surveillance. Finally, educational materials for patients and visitors were translated into 7 languages and shared with other NYC hospitals.

Results. To date, 95 patients with suspect measles presented to our system, with 20 patients (16 pediatric and 4 adult) laboratory-confirmed cases requiring hospital admission due to measles pneumonia, hepatitis, and encephalitis. There was no evidence of transmission within the hospital and ambulatory setting to patients or staff.

Conclusion. A coordinated response involving engineering and administrative controls, PPE training and education is necessary when confronting a large urban measles outbreak.

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

1617. Mumps in Detention Facilities that House Detained Migrants—United States, September 2018–April 2019

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Session: 163. Public Health
Friday, October 4, 2019: 12:15 PM

Background. Starting in September 2018, an unusually high number of mumps cases were reported in US adult detention facilities. Detention facilities usually involve close contact among detainees, facilitating transmission of mumps. Detainees in close contact with a mumps patient are at increased risk for acquiring mumps and should be offered a dose of MMR vaccine. We summarize the epidemiologic, clinical, and laboratory data for mumps cases in adult detention facilities during September 2018-April 2019.

Methods. Data were collected by health departments and US Immigration and Customs Enforcement (ICE) Health Services Corps and reported to CDC. Cases were classified according to the CSTE case definition for mumps and confirmed by RT-qPCR; molecular sequencing was performed on mumps-positive specimens.

Results. From September 2018-April 2019, 389 confirmed and probable mumps cases in adult migrants detained by ICE in 44 detention facilities were reported in 16