significance (5.3 days vs. 4.1 days; $P = 0.080$) and respiratory-related 30-day readmission rates did not differ (9.4% vs. 10.7%; $P = 0.801$). In addition, treatment failure defined as ICU admission (3.1% vs. 0%; $P = 0.210$), requirement for invasive mechanical ventilation (3.1% vs. 0%; $P = 0.210$), and death (1.6% vs. 0%; $P = 0.460$) did not differ significantly between groups.

Conclusion. Implementation of a PCT-guided protocol for the treatment of COPD exacerbations was associated with a significant reduction in antimicrobial days of therapy. We noted a trend in decreasing LOS and no difference respiratory-related 30-day readmissions, or treatment failure. Our PCT-guided protocol has been demonstrated to safely reduce antibiotic utilization in patients with COPD exacerbations.

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1480. Impact of a Guidance Document, Order Set Changes and Physician Education on Antibiotic Prescribing in Acute Exacerbation of COPD

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Background. Current guidelines provide vague recommendations regarding antibiotic choice, duration and patients most likely to benefit from antibiotics during an acute exacerbation of chronic obstructive pulmonary disease (AECOPD). We sought to improve antibiotic prescribing through multidisciplinary creation of a clinical guidance document, order set with imbedded clinical decision support (CDS), and provider education on the management of AECOPD.

Methods. A quasi-experimental study was conducted in adult patients (age >18 years) admitted to Nebraska Medicine for suspected AECOPD before and after clinical decision support was introduced. Patients in the pre-implementation period (10 weeks, April 2015–June 30, 2016, $N = 44$) and a similar post-implementation period (10 weeks, April 2012–June 29, 2017, $N = 51$) were included if COPD was the primary diagnosis code or the COPD exacerbation order set was used at admission. Exclusion criteria included AECOPD admission within the previous 30 days and transfer from an outside hospital. Outcome measures included: percentage of patients receiving antibiotics, median length of therapy, order set usage, antibiotic choices, length of stay (LOS) and oral steroid use.

Results. Post-implementation, the percentage of patients prescribed antibiotics decreased (86.4% vs. 60.8%, $P = 0.006$) as did antibiotics ordered from the order set (29.5% vs. 13.7%). Median length of therapy decreased from 5 days to 1 day pre- vs. post-implementation, respectively. Fluoroquinolone use decreased from 43.2 to 25.5% while azithromycin use remained consistent (18.2% vs. 17.6%). Oral steroid use increased post-implementation (27.3% vs. 41.2%) and average duration of steroid use decreased (11.1 vs. 8.7 days). Average LOS was 3.7 days in both groups and in-hospital mortality was low (2% vs. 0%).

Conclusion. Implementation of an AECOPD guidance document, order set with CDS, and education resulted in significant decreases in antibiotic usage, particularly for fluoroquinolones. Other areas of care also improved using a syndromic stewardship strategy. Our data supports the utilization of this strategy to promote evidence-based antibiotic management in AECOPD.

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

1481. Clinical Outcomes of *Escherichia coli* Infections in Cystic Fibrosis (CF) Patients

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Background. Despite a growing interest in *emerging* pathogens in CF, research has largely overlooked commonplace organisms. *Escherichia coli* has been reported in up to 50% of CF respiratory samples, yet little is known about its clinical impact. We sought to investigate outcomes of *E. coli* infection in CF.

Methods. We undertook a retrospective cohort study of patients (≥18 years) attending a Canadian CF clinic between 1978 and 2016 with at least one *E. coli* positive sputum culture. Infection was classified as transient (≥1 isolate) or persistent (≥3 isolates over a period ≥6 months). Clinical and demographic data were collected from patient charts 2 years pre- and post-incident infection. For each patient with persistent infection, we collected data on two age (±3 years), sex, and time-matched control patients for comparison. Outcomes sought included risk of pulmonary exacerbation (PEx), lung function decline (FEV_1), antibiotic days, and progression to transplant or death. Susceptibility testing was performed as per CLSI standards.

Results. A total of 45 (12.3%) patients (median age 23.5 (IQR 20.0–34.8), 52% male) cultured *E. coli* in their sputum at least once. At incident infection, 24% had PEx but this was not increased relative to prior visits (RR 0.9, $P = 1.00$). Of the cohort, 18 (40%) developed persistent infection. Persistent infection developed in patients with lower nutritional scores (BMI) (−2.6 kg/m^2, $P < 0.001$) and lung function (FEV_1%; 57.2 vs. 74.2, $P = 0.02$). Compared with matched controls, those with persistent infection had no increase in mean annual lung function decline (difference −1.06%/year, $P = 0.24$), odds of PEx (OR 1.4, $P = 0.26$), or mean annual hospital IV days (difference: 0.31 days, 95% CI −4.97 to 5.59 days, $P = 0.91$). Five patients underwent lung transplantation and three died at 5-year follow-up, but this did not differ between transient and persistent infection ($P = 0.63$ and $P = 0.25$, respectively). TMP-SMX resistance ($P = 0.05$), but not ESBL production in incident isolates, was predictive of persistence ($P = 0.56$).

Conclusion. In this Canadian CF cohort, *E. coli* infection was common and occurred more frequently in patients with compromised nutrition and lung function. Persistent infection with *E. coli* did not portend worse clinical outcomes. Multi-centre studies are merited to further understand the epidemiology and clinical impact of *E. coli* infection.

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1482. Changing Patterns of HIV-TB Coinfection Among Patients in a Public Health Department Ambulatory Care Setting: A 5-Year Experience from a US Metropolitan Area

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Background. HIV–TB coinfection leads to a complex set of synergistic interactions in the epidemiology, risk of acquisition, pathogenesis and prognosis of both infections. In the United States, the prevalence of HIV-TB coinfection has been around 6% for the past several years. We present here a 5-year experience at a public health department ambulatory care setting in Tampa, Florida, showing potentially changing patterns. Descriptive data and clinical aspect of coinfected patients is presented.

Methods. A retrospective review of tuberculosis cases over the 5-year period ending December 2017 was performed. Those with HIV coinfection were included in the study. Clinical, microbiological and/or PCR based testing methods were used to make the diagnosis. SPSS was used to compile basic descriptive statistics

Results. There were a total of 411 TB patients and 33 had HIV, an 8% prevalence of coinfection. The median age was 45 years (range 18–65). The male to female ratio was 21:12. Twenty-four percent (8/33) were homeless and 24% were foreign born. Only one patient admitted to using injection drugs while 27% (9/33) used non-injection illicit drugs. Forty-five percent (15/33) had TB symptoms such as fever, night sweats, weight loss and cough; the rest had radiographic abnormality which led to the diagnosis. Only 12% (4/33) had CT scan abnormality reported as cavitary or miliary while the rest had nonspecific infiltrates. Eighty-eight percent (29/33) had pulmonary TB while 6% had lymph node and 6% serosal (one pleural and one peritoneal) infections. Seventy-nine percent (29/33) were treated with a combination of daily observed and self-administered therapy. Twelve percent (4/33) did not complete therapy, or were lost to follow-up whereas one person was diagnosed post mortem thus not treated.

Conclusion. The prevalence of HIV-TB coinfection in our cohort is slightly higher than the recent US average of 6% perhaps signifying the setting and demographics of our patient population. Our cohort was relatively older, most of them US born, and had predominantly pulmonary TB contrary to prior reports. These changing patterns may have been influenced by the overall older age of HIV patients in general or they could be indicators of underlying fundamental changes in the HIV-TB coinfection state at large. Additional study is needed to further elucidate this variance.

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1483. Pleural Empyema Caused by *Stenotrophomonas maltophilia* in a National Cohort of Hospitalized Veterans

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Background. *S. maltophilia* is an environmental multi-drug-resistant Gram-negative bacteria that is mostly found as a respiratory tract colonizer in patients with cystic fibrosis (CF) and as an opportunist in immunocompromised hosts. To understand the role of this pathogen in non-CF patients, we performed a retrospective analysis of hospitalized patients with *S. maltophilia* empyema in the Veterans Health Administration (VHA).

Methods. Using microbiology results within the VHA Corporate Data Warehouse, we identified pleural fluid cultures that tested positive for *S. maltophilia*