

**Methods.** We employed a mix method approach, first distributing a survey to all full-time prescribers. We then followed up with qualitative interviews (12 of 22 prescribers) which was conducted by a single, trained interviewer using a standardized guide. Interviews were recorded and transcribed verbatim. Each transcription was independently reviewed and coded by two blinded investigators using standardized themes and adjudicated by a third investigator for stability, robustness, and interrater reliability. Individually, researchers identified and coded key themes and statements. These themes were then discussed as a group and combined where they shared meaning. This project was reviewed and deemed to be non-human subjects research by the Stanford University School of Medicine Panel on Human Subjects in Medical Research.

**Results.** A total of 20 of the 22 prescribers (13 MDs and 9 APPs) completed the survey (91% response rate). Notably, only 25% of prescribers agreed that COVID-19 had changed their antibiotic prescribing practices for patients with respiratory infections despite objective data that all prescribed less. In the qualitative interviews, we identified four major themes impacting the appropriateness of antibiotic prescribing practices as shown in Table 1.

Table 1. Qualitative themes from prescriber interviews

Patient expectations and knowledge	
Patients more concerned about COVID-19 than bacterial infection	There's more focus on COVID and viral illnesses than on bacterial illnesses. So in a regular year that some viral illness can be misinterpreted as a bacterial infection, but this year I think the focus was on COVID so most patients were fine with having a negative COVID study and taking care of the symptoms on their own versus going for an antibiotic for their sinus symptoms.
Patients sought COVID-19 testing rather than antibiotics	The concern that are on patient's minds are not a bacterial infection, the concern is a COVID infection, so they're not necessarily requesting antibiotics they're requesting a COVID test. I think that has changed the demands on the provider and so they're not pressured to prescribe antibiotics.
Patients more aware that antibiotics do not treat viral infections	I think in a way COVID-19 has helped us be able to educate patients about viral infections and help them understand by learning about viruses a little bit more, that an antibiotic is not going to treat it.
Educating patients on viral vs. bacterial infections is easier	Because of COVID and the understanding now, patients are a little bit more receptive to the fact that they understand now what is viral, what is bacterial. Not everybody, but I think that with some patients, I think it's easier to explain to them than before. It's easier to have that conversation I feel now, than before because people are a little bit more aware about upper respiratory infections.
Diagnosis and treatment	
Prescriber differential diagnosis centered around COVID-19	It's also possible that all of us as providers kind of got a little binary. It's either COVID or it's not COVID, it's COVID or it's not. I caught myself, my differentials were starting to narrow.
Lack of efficacy of antibiotics against COVID-19	Typically, if it wasn't COVID if they came with those same symptoms they would probably be asking about antibiotics, but because with COVID I think they're more concerned about the viral pathogen, and so they understand that antibiotics aren't effective.
Telemedicine	
Limited physical exam	I would not prescribe an antibiotic I think via telemedicine without examining the patient. So yeah 100%, I think getting an exam, listening to the lungs, looking at the throat, and all of that would definitely be necessary for me to even consider prescribing an antibiotic.
Refusing to prescribe antibiotics easier in a telemedicine visit vs. in-person	If it's a telemedicine visit it's a little bit easier to say no to somebody who isn't sitting right next to you.
"Just in case" antibiotic prescribing due to diagnostic uncertainty	Telehealth has created a whole new sort of opportunity for prescribing, especially "just in case medicines." I don't think this is what it is, but I think the consequences of me missing this diagnosis because I can't actually see you or feel you or hear you is worse than me just giving you the antibiotics.
Changing non-COVID-19 infection epidemiology	
Less patients with sinusitis, upper respiratory infections, influenza, bronchitis	I feel like we're seeing a lot less upper respiratory infections in general, far fewer cold and flu visits than we normally would. And it's all the education available this year, I think that's playing a big role in this. It could also be that people are not getting as sick this year. Staying inside, people are wearing masks, so there's less people with upper respiratory infections this year.

**Conclusion.** Urgent care prescribers attributed a decrease in antibiotic prescribing during COVID-19 to changes in patient expectations and knowledge base, a switch to telemedicine-based encounters, and changing epidemiology. These shifts could be utilized by outpatient antimicrobial stewardship efforts to sustain low prescribing rates for conditions in which antibiotics are generally not indicated.

**Disclosures.** Marisa Holubar, MD, MS, Nothing to disclose

## 161. Flucytosine Utilization and Dosing Practices at an Academic Medical Center

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**Session:** P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

**Background.** The typical dose of flucytosine is 25 mg/kg/dose every 6 hours for severe infections due to *Candida* and *Cryptococcus*. Many hospital protocols use ideal body weight (IBW) for initial dosing to achieve a goal peak serum concentration of 30-80 mcg/mL, but this is supported by very limited data. Our objective was to evaluate flucytosine dosing strategies, describe safety concerns, and explore financial benefits associated with using IBW.

**Methods.** All inpatient flucytosine orders for adults from 1/1/2015 through 10/31/2020 were retrospectively evaluated. Doses, weight used, flucytosine levels, adverse events, and potential cost savings associated with IBW dosing were characterized.

**Results.** During this period, 35 patients received flucytosine. The most common indications were cryptococcal meningitis (73%), pulmonary cryptococcosis (14%), and candidiasis (11%). Most patients were receiving concurrent liposomal amphotericin B (92%). Based on body mass index, most patients were overweight or obese (60%). Actual body weight was used for initial dosing in most cases (81%). Flucytosine peak monitoring was performed in 51% of cases. Initial peak levels were supratherapeutic in 10/19 cases (53%). Of those 10 patients, 70% were overweight/obese, and 60% would have received a lower initial dose if IBW had been used with dose rounding to the nearest 500mg capsule. Adverse events for all patients included new onset cytopenias, hepatic and renal dysfunction, occurring in 20%, 11%, and 60% respectively. Those with supratherapeutic levels had higher rates of new onset hepatic and renal dysfunction, 30% and 90% respectively. In 32% of cases, using IBW would have resulted in a lower daily dose, with an average dose reduction of 1888 mg, resulting in a mean cost savings per patient of \$640/day using average wholesale price.

**Conclusion.** Most flucytosine orders were not dosed using IBW, which may have led to supratherapeutic levels. Using IBW for dosing in overweight patients may lead to reduced toxicity and potential cost savings. The default dosing weight for flucytosine in our electronic medical record will be set to IBW to encourage change.

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## 162. Duration of Antibiotics Through Care Transitions: A Quality Improvement Initiative

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**Session:** P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

**Background.** Antibiotic resistance is increasing worldwide, largely driven by excessive antibiotic use. Antibiotic stewardship (AS) interventions have traditionally focused on acute care, long-term care, and ambulatory settings. However, as patients transition from one care setting to another, AS interventions should address antibiotic orders (agent, dose, duration) between the hospital and the home. The purpose of this study is to determine the appropriateness of a total course of antibiotics, including inpatient and outpatient prescriptions, to aid in prioritizing AS interventions.

**Methods.** A single-center, retrospective study was performed to evaluate antibiotic duration for adult patients discharged from a large quaternary-care academic hospital. All antibiotic prescribing data, including pre-admission, during admission, and after hospital discharge, as well as information on indication, was collected from the electronic medical record. Descriptive statistics were used to summarize the data collected.

**Results.** 196 patients were included in the study. There were 100 instances of disagreement on antibiotic indication between the discharge summary and reviewer. However, 70% of patients were discharged on an appropriate antibiotic. The majority of patients (75%) were prescribed excess antibiotic days beyond guideline recommended total duration, and 68% of patients did not have appropriate duration of antibiotics post-discharge. Of those with excess duration, 31% were prescribed penicillins, 23% were prescribed cephalosporins, and 20% were prescribed trimethoprim/sulfamethoxazole. Excess antibiotic duration was associated most commonly with an unknown diagnosis (23%), a skin and soft tissue infection diagnosis (16%), and antibiotic prophylaxis (12%).

**Conclusion.** The results of this study showed that patients were often prescribed excess antibiotics at discharge, and the total duration of antibiotics from pre-admission to post-discharge were prolonged beyond guideline-recommended duration. Understanding the total duration of antibiotic prescription, including post-discharge and pre-admission durations, is key in assessing risk from antibiotics and targeting AS interventions.

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## 163. MIC Shifts in Response to Increased Antibiotic Utilization During COVID-19 Pandemic

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**Session:** P-09. Antimicrobial Stewardship: Trends in Antimicrobial Prescribing

**Background.** Multiple studies have shown that antibiotic utilization increased during the COVID-19 pandemic. However, the impact of this increased utilization has not been well established. The aim of this study is to describe the trends in minimum inhibitory concentrations for various antibiotics against common gram-negative pathogens observed since the start of the COVID-19 pandemic as compared to previous years.

**Methods.** This retrospective study was conducted at the Memphis VA. All respiratory, urine, and blood culture MicroScan results run from October 2017-March 2021 were analyzed. Only inpatient and emergency department data was included. The MIC50 and MIC90 of seven antibiotics for four of the most common pathogens were trended by quarterly intervals.

**Results.** MIC50 and MIC90 were compared using standardized breakpoints. As compared to previous years, *Pseudomonas aeruginosa* was noted to have the most sustained increase in MIC90 across various antibiotics. In the last 3 quarters of the study time frame, piperacillin-tazobactam mean MIC90 increased from 32 to 64, cefepime from 8 to > 16, and meropenem from 4 to > 8. *Escherichia coli* had a sustained increase in ceftriaxone MIC90 from < 1 to > 8 in the final quarter of 2020 and beginning of 2021. *Klebsiella pneumoniae* was also found to have a sustained increase in cefepime mean MIC90 from < 1 to > 16 during the year of 2020, with return to previous MIC90 the following quarters.

**Conclusion.** Previous studies have clearly demonstrated a widespread increase in antibiotic utilization during the COVID era. Our study demonstrates how even short-term increases in antibiotic use can lead to shifts in MIC, if not outright resistance. This was demonstrated across multiple common gram-negative pathogens and to various broad-spectrum antibiotics which were commonly used more frequently during COVID-19. Further analysis will be needed to determine whether these trends