Policy Brief
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Policy Options to Improve Outpatient Antibiotic Prescribing in the Pediatric Medicaid Population in Kentucky

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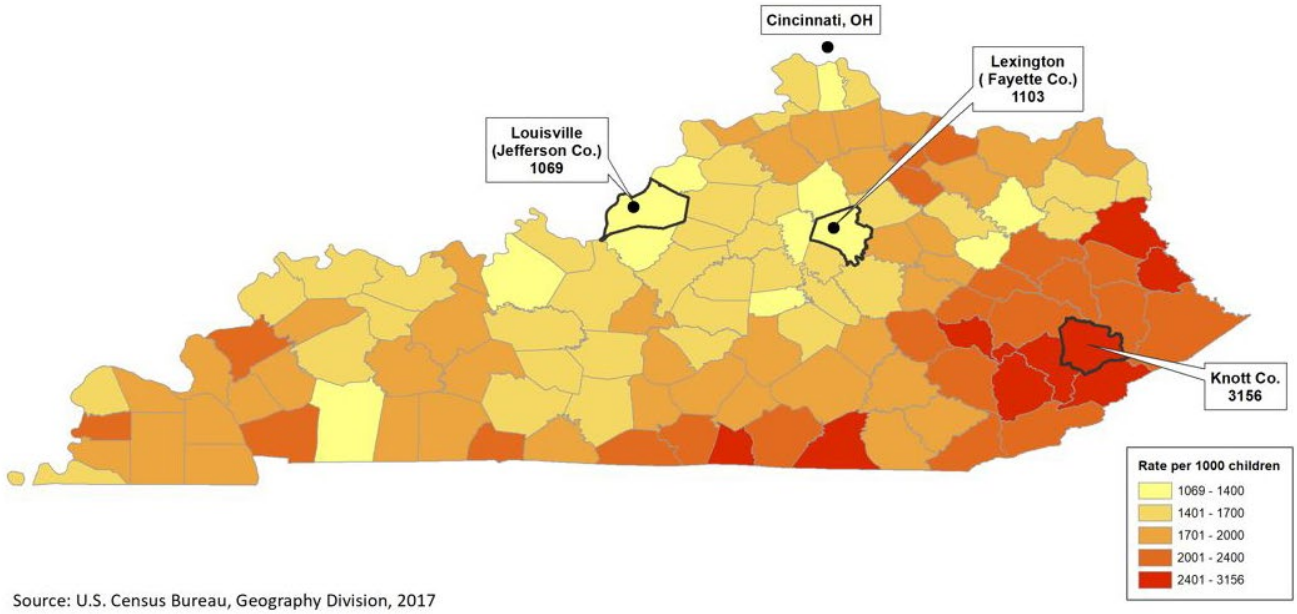
BACKGROUND

Antibiotic resistance is a growing threat to public health, particularly in the pediatric outpatient population where, due to the prevalence and frequency of infections, prescription rates are high.[1,2] While antibiotics are life-saving medications, any use, whether appropriate or inappropriate, can result in antibiotic resistance. One national study found that nearly 30% of all outpatient antibiotic prescribing in the United States may be inappropriate or unnecessary, such as high rates of antibiotic prescribing for viral conditions (e.g. common cold, influenza, viral pneumonia), where national guidelines advise against the use of antibiotics.[3] The Centers for Disease Control and Prevention (CDC) estimates that more than 2.8 million antimicrobial-resistant infections occur in the United States each year, resulting in more than 35,000 deaths.[4]

Antibiotic Prescribing in Kentucky

Rates of pediatric outpatient antibiotic prescribing in Kentucky are high at 1,281 antibiotic prescriptions per 1,000 children, compared to the national rate of 760 antibiotic prescriptions. There are geographic disparities in prescription rates across Kentucky with rural counties in the southeastern part of the state experiencing the highest rates.[5]

Figure 1. Rate of Antibiotic Prescriptions per 1,000 Children per County in Kentucky, 2017



Source: U.S. Census Bureau, Geography Division, 2017

White children, those living in rural areas of the state, and children with chronic conditions have the highest rates of antibiotic prescriptions. Among children covered by Kentucky Medicaid, those under two years old have the highest rate of inappropriate antibiotic prescription use.[6] In 2016, Kentucky Medicaid spent over $17.6 million on antibiotic prescriptions for children.[7]

Efforts to Address Antibiotic Stewardship

Antibiotic stewardship aims to improve how antibiotics are prescribed by providers and used by patients with the goal of protecting patients and improving clinical outcomes. In 2016, the CDC released the *Core Elements of Outpatient Antibiotic Stewardship*, which provides a framework for antibiotic stewardship for outpatient clinicians and facilities that use antibiotic treatments. The framework is intended for any entity interested in antibiotic stewardship, with core elements of:[8]

- **Commitment:** Demonstration of dedication to and accountability for optimizing antibiotic prescribing and patient safety.
- **Action for policy and practice:** Implementation of at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed.
- **Tracking and reporting:** Monitoring antibiotic prescribing practices and offering regular feedback to clinicians, or having clinicians assess their own antibiotic prescribing practices themselves.
- **Education and expertise:** Providing educational resources to clinicians and patients on antibiotic prescribing, and ensuring access to needed expertise on optimizing antibiotic prescribing.

Metropolitan areas with large, academic medical centers are historically among the first to implement robust stewardship efforts; however, the variation in prescribing across Kentucky highlights the need for state-wide policy initiatives that can positively impact rural communities as well.

Learning from other States and Initiatives

Strategies used to address stewardship in outpatient settings include efforts such as the CDC's 6|18 Initiative. This initiative focuses on six common and costly health conditions, including improving antibiotic use, with the intent to improve health and healthcare costs by providing rigorous evidence, highlighting interventions, and aligning practices with value-based payment methods.[9] As another effort to engage healthcare payers, the CDC has developed *Improving Outpatient Antibiotic Prescribing: A Toolkit for Healthcare Payers*, which includes example metrics for antibiotic prescribing alongside key strategies for quality improvement. The CDC has also partnered with payers to improve antibiotic stewardship. One partnership with Aetna, a private insurance company, notified network providers whose antibiotic prescribing rates were higher than other providers' rates and disseminated resources to improve stewardship.[10]

A growing number of governmental entities have used policies to improve antibiotic prescribing in hospital settings. In September 2019, the Centers for Medicare and Medicaid Services (CMS) finalized a rule requiring hospitals that receive Medicaid or Medicare dollars to have antibiotic stewardship programs in place. These programs are required to include best practices to follow nationally recognized standards related to appropriate antibiotic use.[11,12]

A handful of states have adopted state-wide policies related to antibiotic stewardship. One example is California, the first state to enact legislation, which passed SB1311 in 2014, requiring hospitals to

adopt and implement a stewardship policy and to establish a quality improvement committee to monitor and report antibiotic prescribing.[13,14] Missouri passed SB579 in 2016, requiring all non-psychiatric hospitals to report antibiotic use to the CDC's National Healthcare Safety Network, a healthcare-associated infection tracking system.[15]

Existing Antibiotic Stewardship Efforts in Kentucky

Several state-wide and local efforts in Kentucky focus on antibiotic stewardship. One state-wide effort is Kentucky Antibiotic Awareness (KAA), a campaign to reduce inappropriate antibiotic use through the dissemination of educational materials, local presentations to providers, social media, and contributions to the peer-reviewed literature. KAA has presented at numerous state and national conferences and has reached hundreds of healthcare providers. Education for patients and providers is a core element of the CDC's antibiotic stewardship framework. A 2019 study of an educational intervention in rural Kentucky demonstrated significantly lower prescribing rates when combined patient and provider education was available, compared to a period when there was no education.[16]

Clinicians and researchers at the University of Louisville have been collaborating with Kentucky Medicaid to pilot provider feedback reports on pediatric antibiotic prescribing to prescribers throughout the state. This effort aligns with the core elements presented in the CDC's framework and is an effective strategy for increasing provider awareness of their own antibiotic prescribing. Studies have shown that providers are often unaware of their own antibiotic prescribing patterns and can benefit from seeing and reflecting upon data from their own practice.[17,18]

State-Based Policy Options for Kentucky

While CDC has made substantial progress in recommending outpatient antibiotic stewardship, no state has passed legislation focused on the outpatient setting. Kentucky, which has one of the highest rates of antibiotic prescribing in the country, has the opportunity to lead the nation in these efforts.

Several policy options that Kentucky could consider are described below. This review excludes policy options that are infeasible due to either extensive administrative burden or potential pushback from key stakeholders such as prior authorization requirements that would likely face opposition from providers.

Improve the availability of data and information to monitor prescribing and quality outcomes.

Studies have shown that providers are often unaware of their own prescribing patterns and do not see themselves as contributors to the problem of antibiotic resistance.[19] Disseminating information and data to providers could take the form of education around the appropriateness of antibiotics given certain diagnoses or giving providers data regarding their own prescribing behavior. Provider-specific antibiotic prescription rates can, for example, be compared to a benchmark or other provider rates in their community in an effort to motivate behavior change by demonstrating to a provider that they are an outlier on a particular measure. This strategy has been shown to significantly reduce antibiotic prescribing and is a low-cost measure to implement.[20]

Implement retrospective drug utilization review processes within the Kentucky Medicaid program to limit potentially unnecessary antibiotic prescriptions.

As a less restrictive administrative review process, Kentucky Medicaid could consider requiring antibiotic-specific retrospective drug utilization (DUR) review. Kentucky currently has DUR in place for

both Medicaid Managed Care and fee-for-service enrollees and could consider requiring a more detailed review of pediatric antibiotic prescribing as part of third-party contracts. A retrospective DUR process could provide important information and data about the potential of other policy interventions to impact over- and inappropriate antibiotic prescribing among Kentucky children, including additional evidence of the potential for impacting quality and costs within Kentucky Medicaid.

Establish payment models in Kentucky Medicaid that tie reimbursement to achieving quality outcomes related to antibiotic use.

As the Kentucky Medicaid program considers the integration of value-based payment (VBP) models, the state could require that providers meet certain metrics as a condition of reimbursement. The Merit-based Incentive Payment System (MIPS), which applies to providers that offer services under Medicare Part B, has already established measures for reporting and includes two pediatric measures on antibiotic use established by the National Committee for Quality Assurance.[21,22] If Kentucky Medicaid proceeds with value-based payment models in this area, planning should incorporate documentation and public reporting of current issues related to pediatric antibiotic prescribing, engaging members of the Kentucky General Assembly in design discussions, and a focused effort to incorporate provider input into planning, design, and implementation. This can and should build on prior analysis of pediatric antibiotic prescribing by the Kentucky Antibiotic Awareness team. One challenge to this approach is the variability in provider readiness to implement value-based payments, which could impede progress as provider buy-in is established.[23]

Require MCOs to support local quality improvement efforts to encourage Kentucky providers to adopt and implement evidence-based antibiotic stewardship models in their practices.

In January 2020, the Joint Commission began requiring all accredited ambulatory health care organizations to meet five new elements of performance related to appropriate antibiotic prescribing.[24] These include: identifying an antimicrobial stewardship leader, establishing an annual antimicrobial stewardship goal, implementing evidence-based practice guidelines, providing clinical staff with educational resources related to the antimicrobial stewardship goal, and collecting, analyzing, and reporting related data. While their reach is not extensive in outpatient pediatric practices in Kentucky, the essence of this Joint Commission requirement is important. Kentucky Medicaid could consider requiring MCOs in the state to support local projects that integrate stewardship into pediatric practices across the state, building on and using toolkits and resources already developed by the CDC and Kentucky Antibiotic Awareness. A key aspect of this would be establishing or adopting standardized metrics to monitor progress in pediatric antibiotic prescribing both within and across MCOs, which ties in closely with the next policy option.

Leverage existing efforts to report antibiotic stewardship metrics by requiring public reporting of quality outcomes by each MCO and action plans when goals are not met.

The CDC *Core Elements of Outpatient Antibiotic Stewardship* establishes tracking and reporting recommendations and guidance, including for health plans. As a large payer of pediatric health services, Kentucky Medicaid can build upon this guidance to establish monitoring and feedback mechanisms through the MCOs that administer Medicaid benefits. Using this guidance and existing quality measures, Kentucky Medicaid can strengthen public reporting mechanisms that track progress at the provider and MCO levels and require these as part of the MCO contracting process.

Kentucky Medicaid currently works with Island Peer Review (IPRO) for external quality reviews, which include assessment of measures on antibiotic prescribing. Previous reviews demonstrate Kentucky MCOs rate very low in meeting metrics around antibiotic prescribing, including appropriate prescribing for children with upper respiratory infections.[25] As part of this review, IPRO makes recommendations for improvement, and the MCOs must respond in writing with their plan of action for addressing the recommendation. The most recent 2020 report, which includes 2019 recommendations, did not include any recommendations related to antibiotic prescribing, despite rates lower than the 25th percentile. Given the scope of the problem, specific emphasis on addressing these quality metrics is warranted. As evidence for this as a growing area of importance for monitoring, the Healthcare Effectiveness Data and Information Set (HEDIS) recently added a new measure for antibiotic prescribing in all respiratory conditions for individuals three months or older (Acute Respiratory Conditions, AXR).[26] This could provide a baseline for Kentucky Medicaid MCOs to consistently track progress in this area. Continuation or expansion of the current provider feedback report pilot, an initiative that is currently supported by a State University Partnership, could be used as a starting point for this recommendation.

CONCLUSION

Kentucky's Medicaid program spends over $15 million per year on antibiotic prescriptions for children.[27] An intentional focus on reducing unnecessary antibiotic prescribing could result in cost savings and improved quality of care for children in Kentucky. Each policy intervention described above could alone, or in combination with others, contribute to Kentucky becoming a leader in outpatient pediatric antibiotic prescribing.

CONTACT INFORMATION

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