A Qualitative Assessment of Drivers of Antimicrobial Prescribing for Pediatric Patients in Diverse Ambulatory Settings

H SPENCER, MD, MPH[1]; S KATZ, MD, MPH[1]; C AUDET, PHD, MSC[2]; R BANERJEE, MD, PHD[1]

Departments of [1]Pediatrics (Infectious Diseases) and [2]Health Policy at Vanderbilt University Medical Center

Contact Email: Hillary.Spencer@vumc.org

BACKGROUND

- Antimicrobial prescribing rates vary widely across the country for both children and adults.[1]
- Prescribing also varies across ambulatory settings including primary care, urgent care, retail clinics, and emergency departments, as well as by provider type and training.[2,3]

OBJECTIVE

To Identify and compare non-clinical drivers of antimicrobial prescribing for children across diverse outpatient settings through qualitative methods.

METHODS

- Recruited physicians and advanced practice providers (APPs) working in sites affiliated with Vanderbilt
  - primary care
  - urgent care
  - retail health clinics (**Table 1**).
- Conducted in-person or telephone interviews
- An interim analysis was performed using an iterative and inductive process with 10 transcripts.

Sample Interview Questions:

- Rank priorities: cost/coverage, familiarity, ease of dosing, guidelines, antibiogram data, antibiotic spectrum
- What kind of scenarios make it difficult to align with your priorities?
- Pharyngitis and otitis case presented. Tell what you think and how you would manage.
- Do you think your setting is a high or low prescribing setting and why?
- What do you think are the biggest barriers to improving antibiotic prescribing?
- Do you receive feedback on your prescribing and does it impact your practice?

RESULTS

- Forty-nine providers interviewed to date. Twenty-five (51%) were APPs. Thirty-nine (80%) interviews were conducted by telephone.
- Thirty-six (73%) providers identified "guideline recommended" as the primary factor informing prescribing decisions (**Figure**).
- Ten of 46 transcripts were analyzed in depth to identify preliminary themes and develop a coding strategy for the remaining data set.
- Providers perceived that the ability to provide guideline concordant care was determined by a complex interaction of patient, provider, and setting factors (**Figure**).
- Standardized antibiotic prescribing practices within each clinic setting and the larger community was perceived to inform parental expectations.
- Shaping parental expectations in a way that aligns with guidelines is a process that happens over time rather than being a one-time event. (**Table 2**)

FIGURE: DIAGRAM OF RELATIONSHIP BETWEEN MAJOR CATEGORIES AND SELECT THEMES (n=10)

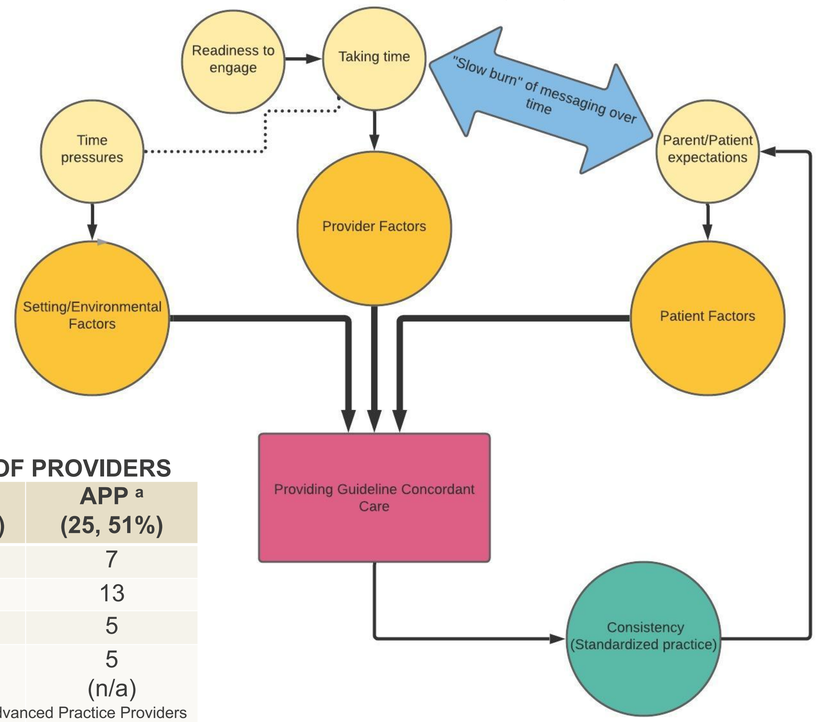

TABLE 1: CHARACTERISTICS OF PROVIDERS

Total (n=49)	Physician (n=24, 49%)	APP [a] (25, 51%)
Primary Care (n=17)	10	7
Retail Care (n=13)	(n/a)	13
Urgent Care:	14	5
Walk-in Clinic (n=9)	4	5
After-hours (n=10)	10	(n/a)

[a]APP = Advanced Practice Providers

TABLE 2: SELECT THEMES AND SAMPLE QUOTES (n=10)

Theme	Quote
Consistency (Standardized Practice)	"A lot of it stems from **what they're familiar with**, like with previous providers that they've interacted with or maybe the parents' own providers. It's really kind of how we conduct ourselves that helps the parents to know what's normal"
"Slow burn" of messaging over time	"As things change slowly … it just becomes more normalized. …Things change slowly as more people have the experience… So, **it just takes a slow burn**."
Parental expectations	"Some parents will say, '**Last time she had this she had amoxicillin** and she was better.' That would be one that **I would know that's what the parents think is going to happen during the visit**."
Readiness to engage	"Towards the end of the day that **fatigue** sets in… So if someone is going to, I don't want to say argue, but have a really tough time hearing the education piece, I may be more apt to…**give in towards the end of the shift** than at the beginning."
Taking time	"But I really, really, really **try to make an effort** in spending 10 minutes or so of just education, talking with families about, hey this is where we are with antibiotics… even sometimes when we've got someone waiting, **just really spending that time** on education."

CONCLUSIONS

- Across settings, providers cited **clinical guidelines as the most important factor influencing antibiotic prescribing**.
- Providers felt that **adherence to guidelines had downstream benefits** including standardization of prescribing practices which may shape parental expectations in a way that aligns with guidelines, thus **facilitating guideline-concordant care** in future encounters.
- These findings can inform design of outpatient stewardship interventions.
- Additional recruitment and analysis is ongoing.

REFERENCES

1. Fleming-Dutra KE, Demirjian A, Bartoces M, Roberts RM, Taylor TH, Jr., Hicks LA. Variations in Antibiotic and Azithromycin Prescribing for Children by Geography and Specialty-United States, 2013. *The Pediatric Infectious Disease Journal.* 2018;37(1):52-58.
2. Palms DL, Hicks LA, Bartoces M, et al. Comparison of Antibiotic Prescribing in Retail Clinics, Urgent Care Centers, Emergency Departments, and Traditional Ambulatory Care Settings in the United States. *JAMA Internal Medicine.* 2018;178(9):1267-1269.
3. Katz, S, et al. SHEA Decennial Conference, 2020.

This work was supported by the Childhood Infections Research Program (NIAID 5T32-AI095202-09, PI: Mark Denison) and the David T, Karzon Fellowship in Pediatric Infectious Diseases.