Introduction

- The human microbiome is thought to play a role in general health and immune system development.
- Disruptions to evolutionarily selected microbial patterns can affect human health.
- Antibiotic consumption disrupts microbe composition.
- Antibiotic prescription rates vary for a number of reasons.

Reflection

- Trends in antibiotic prescription rates may provide insight into which subgroups within population are at higher risk for health challenges.
- According to past studies, some factors that may affect antibiotic prescription rates include age, gender, socioeconomic status, insurance type, regional income, patient education, doctor density, number of private and public health care centers, and average distance to hospital.
- Many of these studies were done outside of the US; further analysis of trends in the US may enhance current understandings of health conditions and risks.

Objective of Internship

This internship provided me with the opportunity to review current literature and begin my senior thesis research in the Levin Lab.

Work profile

- Reviewed scientific literature on the human microbiome
- Developed research questions and defined scope of independent project
- Discussed progress with Dr. Levin
- Began analyzing US antibiotic prescription data using R software

Looking Ahead

I plan to continue this research for my senior thesis. Reviewing literature, defining research questions, and beginning analysis provided me with a strong basis for my project this year.

Data Sources:

- IMS Drug Distribution Data
- US Censuses
- the Dartmouth Atlas of Health
- Statistical analysis performed using R software

Conclusion

There is variation in US antibiotic prescription rates, and further analysis should be done to understand how gender, income, age, and ethnicity may contribute to differing rates.

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