Section 3 Primer

Beliefs and Attitudes Influencing Prescribing Behavior

2019 CORE Antimicrobial Stewardship CURRICULUM

On a broad scale, three domains influence medical decision - making within the context of societal norms[1]:

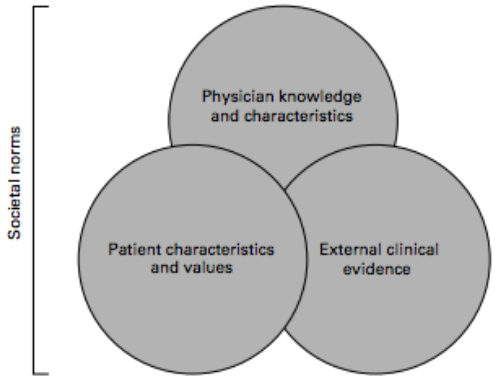

Figure 1 Model of clinical decision making.

Regarding antimicrobial prescribing specifically, there are multiple influences:

Antibiotic overuse and resistance is seen as a global problem but not necessarily relevant to the patient at hand

- Antibiotic overuse is recognized but generally accepted[2]: "not my problem"

Perceived Patient Expectations:

- Clinicians are more likely to prescribe antibiotics for patients who they believe expect them but their ability to identify patients who expect antibiotics are poor[3,4]
- However, patient satisfaction is not associated with whether an expected prescription for an antimicrobial is received[3,4]

Fear/Uncertainty Avoidance:

- Spiraling empiricism
- Potential adverse effects of antibiotics have limited influence on decision making as physicians are more concerned about immediate risk presented by infection rather than delayed consequences of antibiotic over use[2]
- On a country level, uncertainty avoidance as a cultural dimension has been correlated with inappropriate antibiotic use[5,6]

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Prescribing Etiquette[7]: A set of cultural rules or "prescribing etiquette" determines prescribing behavior

- Culture of non-interference with other clinician's decisions (respect for decision making autonomy)
- Perception of limitations of evidence based practice
  - Experience trumps evidence
  - Patients frequently considered to be "outside" the boundaries of evidence - based treatment policies
- Culture of hierarchy: Prescribing driven by senior physicians/"role models"

Principles of Behavioral Change:

- Effective culture change often requires utilization of "informal" channels as these tend to be the most powerful motivators of behavior change
- Active approaches more likely to be effective (but are also costlier)
- Multidimensional approaches appear to be the most effective

Systematic approaches to behavioral change:

Education:

- Passive dissemination of educational material is generally ineffective although may help raise awareness[8]
- Interactive, hands on workshops are more effective than simple didactic seminars[9]
- Academic detailing, i.e. face-to-face education of individual prescribers by specially trained clinical educators, has been shown to be highly effective[10]

Opinion Leaders:

- Use of local opinion leaders increases uptake of guidelines recommendations

Point of practice interventions:

- Clinical decision support tools, either posted in exam rooms or integrated into the EMR[11]
- Displaying poster-sized letters announcing a commitment to not prescribe antibiotics for URIs resulted in significantly lower rate of antibiotic prescribing[12]

Audit and Feedback:

- Providing clinicians with a summary of individual clinical performance
- Prospective audit and feedback: daily review of antimicrobial prescriptions with timely feedback by the antimicrobial stewardship team
- Not durable, effects are lost after discontinuation of programs[13]

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Individual level approach to influencing behavior:

Motivational Interviewing

- Initially developed for addiction counselling and has now been applied to various health related behaviors
- A collaborative goal-oriented approach to communication
- The same principles can be applied to changing physicians prescribing behavior:

PRINCIPLES MOTIVATIONAL INTERVIEWING[14]

- **Express empathy**
- **Develop discrepancy**
- **Avoid argumentation**
- **Roll with resistance**
- **Support self-efficacy**

Suggested Reading: Stewards-in-training are strongly encouraged to read these references prior to completing Section 3 "Educating and Coaching on Antimicrobial Stewardship" of IDSA's Core Antimicrobial Stewardship (CAS) Curriculum.

•*Spiraling Empiricism*: Kim JH, Gallis HA. Observations on spiraling empiricism: its causes, allure,and perils, with particular reference to antibiotic therapy. Am J Med. 1989 Aug;87(2):201-6

•*Prescribing Etiquette:* Charani E, Castro-Sanchez E, Sevdalis N, Kyratsis Y, Drumright L, Shah N, Holmes A Understanding the determinants of antimicrobial prescribing within hospitals: the role of "prescribing etiquette". Clin Infect Dis. 2013 Jul;57(2):188-96.

•*Influencing Prescribing Patterns (A review):* Sbarbaro JA. Can we influence prescribing patterns? Clin Infect Dis. 2001 Sep 15;33 Suppl 3:S240-4.

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11. Gonzales R, Anderer T, McCulloch CE, Maselli JH, Bloom FJ, Graf TR, Stahl M, Yefko M, Molecavage J, Metlay JP. A Cluster Randomized Trial of Decision Support Strategies for Reducing Antibiotic Use in Acute Bronchitis. *JAMA Intern Med.* 2013;173(4):267–273.
12. Meeker D, Knight TK, Friedberg MW, Linder JA, Goldstein NJ, Fox CR, Rothfeld A, Diaz G, Doctor JN. Nudging guideline-concordant antibiotic prescribing: a randomized clinical trial. JAMA Intern Med. 2014 Mar;174(3):425-31.
13. Gerber JS, Prasad PA, Fiks AG, Localio AR, Bell LM, Keren R, Zaoutis TE. Durability of Benefits of an Outpatient Antimicrobial Stewardship Intervention After Discontinuation of Audit and Feedback. *JAMA.*2014;312(23):2569–2570. doi:10.1001/jama.2014.14042
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