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

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: “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.
  - However, patient satisfaction is not associated with whether an expected prescription for an antimicrobial is received.

- **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 overuse.
  - On a country level, uncertainty avoidance as a cultural dimension has been correlated with inappropriate antibiotic use.
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# Prescribing Etiquette: 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
  o Experience trumps evidence
  o 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
- Interactive, hands on workshops are more effective than simple didactic seminars
- Academic detailing, i.e. face-to-face education of individual prescribers by specially trained clinical educators, has been shown to be highly effective

# 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
- Displaying poster-sized letters announcing a commitment to not prescribe antibiotics for URIs resulted in significantly lower rate of antibiotic prescribing

# 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
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
- 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.


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References: