Clinicians' Beliefs, Knowledge, Attitudes, and Planned Behaviors on Antibiotic Prescribing in Acute Respiratory Infections.

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Abstract (Amended)

Background:
We sought to gauge provider perceptions to prepare an intervention which featured audit-feedback reports, academic detailing, and communication training to improve antibiotic treatment of acute respiratory infections (ARIs).

Methods:
One-on-one interviews with providers (n=20) from five VA Medical Centers were conducted in May-July 2017. Participants were recruited from emergency departments, primary care and community-based outreach clinics by e-mail. Interviews were conducted by telephone, audio-recorded, and transcribed. The Theory of Planned Behavior was used to develop semi-structured interview questions to capture attitudes, subjective norms (peer practices), planned future behaviors for managing ARIs, and intervention tools. Interviews were analyzed using codes developed from participant responses and categorized via consensus among authors. Codes were categorized into themes to map mental models.

Results:
Beliefs and Attitudes**:** Providers were open to audit-feedback and tools to improve prescribing practices. Barriers to appropriate prescribing were perceived to include patient demand, time and resource limitations. Unfamiliarity with receipt of personal feedback and undefined roles of personnel to provide feedback within the clinic were anticipated to impede successful implementation. Behavior Control: Providers felt they had control to withhold or prescribe antibiotics. Social Norms: Peer practices and lack of patient knowledge were perceived to drive patient demand depending on available resources. Planned Future Behaviors: The use of audit-feedback and communication strategies to address perceived patient demand were viable solutions to improve prescribing practices. However, utility of Shared Decision Making as a strategy varied due to provider expertise that antibiotics were not indicated for most ARIs; patient gaps in knowledge; and perceived patient insistence for an antibiotic.

Discussion:
Providers often intend to prescribe antibiotics appropriately yet barriers can influence practice. Potential interventions should provide tailored audit-feedback, address perceived patient demand, and support clinic structure to provide feedback. Strategies should consider time and resources available to address barriers.

Objective

Provider perceptions and acceptability of intervention components may play a pivotal role in adoption of processes that lead to long-term and sustained behavior change. We aimed to gauge provider mental models concerning appropriate antibiotic use and identify the acceptability of proposed intervention activities to improve antibiotic use within outpatient settings.

Analysis Process

Interview Questions Created & Reviewed by Expert Panel

i.e: How much control do you have over the prescribing decisions that you make?

One-on-One, phone interviews were conducted and transcribed

- I: Okay, and how much control do you have over the prescribing decisions that you make?
- P: "It's 100%."

Transcriptions were reviewed for consistency among qualitative researchers and provided a code

I: Okay, and how much control do you have over the prescribing decisions that you make?
P: "It's 100%." → Code:Belief: Provider is 100% in control in prescribing decisions

Codes were analyzed with quotes and placed into families:

Code: Belief: Provider is 100% in control in prescribing decisions → Code Family: Belief: Behavioral control; Working Theme 2: Decisions

Family codes and quotes analyzed for meaning.

Results

A total of 20 providers from five geographically distinct VA facilities were interviewed. Overall, our sample featured a majority of females (n=13), approximately half were mid-level providers (n= 11), and most were associated with an academic site (n=14). Representation of ED (n=6), CBOC (n=7), and PC (n=7) settings were nearly equal across the sample. Barriers to appropriate antibiotic prescribing included the lack of time and resources to address patient demand and diagnostic uncertainty. Time was cited as a barrier for both cases, as well as, a barrier to seek provider education and perform patient education. Perceived norms that were believed to drive inappropriate prescribing included the actions of frequent antibiotic prescribing by peers and the lack of patient knowledge. Providers felt they had control over prescribing decisions. Opportunity is ample to improve antibiotic use based on quality improvement initiatives that utilize audit-feedback, academic detailing, and communication techniques due to the lack of current processes in clinics (see below for select quotes concerning antibiotic use and potential acceptability of intervention components).

Perceived Schema for Antibiotic Use

Beliefs & Attitudes

Appropriate Prescribing Barriers

- Patient Demand: "That's the 800-pound gorilla. It's where I'm getting strong pressure from the patient."
- Time: "It's the education piece, that's where the time and the effort goes in (.)"
- Resources: "We don't even have rapid strep tests […] So I think that that makes it difficult."

Perceived Barriers to Intervention Implementation:

- "I think that we don't have good mechanisms [..] for finding an appropriate way to single people out [...] if you listed all of the providers in the clinic and how many prescriptions that each person was rating, that may have some effect [...] even if you get a bump and a response from somebody, then you have to have the constant follow-up [...] finding a peer who is comfortable enough (laughter) to do it is going to be hard, and then having the time to do it and the diligence."

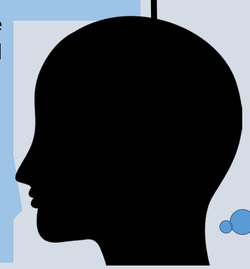
Social Norms

Barriers to Appropriate Prescribing

- Peer Practice::"[...] I think it becomes an issue if you're caving all the time. If you become the antibiotic go-to [...] if you're the one that everybody says, well so and so gave me so and so […]"
- Lack of Patient Education: "[…] we don't just have to change the providers, but we also have to change the patient mentality […]

Behavioral Control

- "Basically, you make a decision based on the clinical assessment and evaluation. So we make our own decisions as to what we prescribe or don't prescribe. So I feel like I have control."
- "Total control. The only limitations are pharmacy in terms of what we have on formulary."



Planned Future Behaviors and Acceptability of Intervention

Personal Feedback
" […] if it's presented as something for people to add as opposed to an extra tool for them to use, then that would probably be more successful than criticizing people for the way in which they are doing things. "
"Ooh, I would really like that (feedback on prescribing practices). You know, I like to know that I'm staying within what's evidence-based. I want that. That would be great."

Communication Techniques
"Just mainly what are good ways to communicate to the patient […] how do we overcome any barriers that may occur while talking to the patient.
"Oh, you know, I think that would be helpful. I'd be completely open to that."

Education
"[…] if someone were to educate me on what is more appropriate for this or that you know that would be welcome information for me. "
"[…] I think that that's the first part is patient education."

Conclusion

Interventions should aim to provide tools to providers to overcome barriers such as patient demand, resource limitations, and be considerate of time. In general, audit-feedback reports and education for both the provider and patient are viable solutions to improve prescribing practice. In addition, providers felt they were able to prescribe autonomously when resources were available to allow for adequate diagnostic of ARIs.

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