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Concise Communication

Exploring prescriber perspectives toward nurses' active involvement in antimicrobial stewardship: A qualitative study

William G. Greendyke MD[1,2], Alexandra N. Shelley MS, RN-BC, FNP-BC[3], Philip Zachariah MD, MS[2,4], E. Yoko Furuya MD, MS[1,2] and Eileen J. Carter PhD, RN[5,6]

[1]Department of Medicine, Columbia University Irving Medical Center, New York, New York, [2]Infection Prevention and Control, NewYork-Presbyterian Hospital, New York, New York, [3]NewYork-Presbyterian/Lower Manhattan Hospital, New York, New York, [4]Department of Pediatrics, Columbia University Irving Medical Center, New York, New York, [5]Columbia University School of Nursing, New York, New York and [6]NewYork-Presbyterian Hospital, New York, New York

Abstract

Little is known about prescribers' attitudes regarding clinical nurses and antimicrobial stewardship. We conducted focus groups of prescribers and inquired about attitudes regarding nurses and stewardship. During 6 focus groups, prescribers were receptive to nursing involvement in stewardship activities, but noted structural barriers and knowledge gaps that should be addressed.

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Inappropriate antimicrobial usage is associated with increasing resistance to frontline antimicrobial therapy.[1–3] Interest has increased in recruiting novel stakeholders across a variety of disciplines to assist with antimicrobial stewardship (AS) in the inpatient setting.[4–6] The Centers for Disease Control and Prevention and the American Nurses Association (CDC/ANA) have outlined specific responsibilities for clinical nurses in antimicrobial stewardship efforts (Tables 1 and 2).[7] We previously conducted a qualitative study of nurses' attitudes regarding CDC/ANA recommendations and found that some responsibilities were perceived to expand traditional nursing roles and thus require prescribers' (eg, physicians and midlevel practitioners) engagement to be implemented effectively.[8] In our follow-up, we conducted a qualitative study with prescribers to explore their attitudes towards CDC/ANA recommendations regarding nurses' involvement in antibiotic stewardship.

Methods

Between July 2017 and March 2018, we conducted focus groups with prescribers at 2 tertiary-care academic medical centers in New York City (hospitals A and B). A variety of prescriber specialties and levels of training were sought to allow for multiple perspectives. Hospital A is a 745-bed adult-care hospital; hospital B is a 268-bed pediatric specialty hospital. Both have long-standing AS programs comprised of ID physicians and ID pharmacists. To facilitate participation, focus groups were conducted in conjunction with existing departmental meetings, and prescribers were given the option of individual interviews to accommodate conflicting schedules. Each focus group was comprised solely of members within a particular specialty or level of training. All participants routinely prescribed antibiotics in the inpatient setting and interacted routinely with clinical nurses. A nurse researcher (E.C.) moderated group discussion, and an advanced practice nurse (A.S.) was also present. An interview guide was used to guide focus-group discussion, and questions were adapted over the course of data collection to reflect emerging themes. Data collection ceased when newly conducted focus groups yielded no new information.

Discussions were recorded and transcribed using a professional transcription service. All transcriptions were reviewed for accuracy. Data were coded by 2 members of the research team (W.G. and E.C.) in NVivo software (http://www.qsrinternational.com/nvivo/nvivo-products) and were analyzed thematically. To ensure consistent coding procedures, 50% of transcripts were independently coded by both researchers. The application of codes was compared, and discrepancies were discussed and resolved by consensus. This study was deemed exempt from approval by the Columbia University Irving Medical Center Institutional Review Board.

Results

Overall, 6 focus groups were conducted among 10 adult hospitalists, 10 internal medicine residents, 9 pediatricians, and 8 critical care nurse practitioners. All participants were familiar with AS concepts and had routine contact with clinical nurses.

When asked to reflect on current nursing roles regarding antimicrobial use, prescribers perceived that nurses' increased presence at the bedside positioned them well to contribute to stewardship activities. For example, one hospitalist recounted that nurses can help identify patients who may have bacterial infections, "I actually try to elicit the nurse's opinion …

Author for correspondence: William G. Greendyke, E-mail: wgg2104@cumc.columbia.edu

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Table 1. Facilitators Identified With Specific CDC/ANA Recommendations Regarding Increased Nursing Involvement in Antimicrobial Stewardship

	Facilitators Identified			
CDC/ANA Recommendation	Perception that nurses' uptake of recommendation would improve integrity of clinical data	Perception that nurses' active assessment and critical judgement would facilitate improved patient care	Perception that nurses' uptake of recommendation would prompt prescribers to reconsider antibiotic therapy	Selected Quotes
Nurses can play a major role in antimicrobial stewardship by obtaining and recording an accurate penicillin drug allergy history.	X			"I think what happens is sometimes the patient . . . might have an altered mental status or might be distressed and might not really be able to provide a good history. And then, by the time they get to the unit and it's time for the nurse—they might be improved . . . It might be another opportunity to try to get a little bit more information."
Nurses can encourage the switch from IV to PO antimicrobials.		X	X	"[A] viewpoint that the nurse will bring in, say, 'The patient seems to be eating and drinking well, maybe they lost their IV . . . could we potentially, instead of replacing the IV, give the antibiotic by mouth?'" "They're not trying to say there's a better oral or that I'm doing something wrong . . . they're just making me stop, think, 'Yeah, they probably don't [need IV therapy]. Let's switch 'em.' "
Nurses can initiate an antibiotic time-out with prescribers.			X	"I think it's a good check. It reminds me actually of . . . patient restraints, you know, it's not necessarily a question of whether the patient needs restraints. But it's like the order falls off and the nurses often remind the providers, 'Hey, your 24 hours—or Foley's, like you know, it's gonna expire soon, you have to reorder that.' And I think that cues the team in case they for—whatever reason, hopefully they are not forgetting that patient is on restraints or forgetting that people's on antibiotics. It's a good prompt [for] them to reevaluate everything they're doing."
Nurses can ensure that cultures are obtained appropriately and when indicated.	X	X		I think nurses can definitely [say], 'Antibiotics are ordered, but no cultures are in the system. Are you sure you wanna do it this way?'

[b]ecause . . . they are . . . seeing the patient all the time, and they might see things that I'm not seeing . . . " Other participants noted an experienced nurse's value in recognizing common side effects that may occur when a patient is receiving antimicrobials. A pediatrician stated, "If there's a [patient with] Red Man [Syndrome] . . . the nurse may tell parents, 'Don't worry; we see this often, I'll stop the infusion, or decrease and I'll call the doctor,' . . . a knowledgeable nurse can be very helpful to a panicky parent or to a difficult situation."

When asked about specific CDC/ANA recommendations, prescribers were optimistic about recommendations that were perceived to easily facilitate appropriate antibiotic prescribing. For instance, regarding a recommendation that nurses help clarify penicillin allergies, it was felt that nurses' thorough documentation of assessments would be useful for patients with altered mental status or in pediatric patients when parents may be infrequently present. In a similar manner, the recommendation that nurses incorporate best practices when obtaining blood cultures (eg, obtaining cultures prior to initiating antibiotic therapy) to facilitate accurate diagnostic testing was quite well received.

Prescribers noted several potential barriers to effective implementation of some CDC/ANA recommendations. The first overarching barrier noted was that implementation of recommendations that were perceived to significantly change nurses' scope of practice were thought to be particularly challenging. For instance, a recommendation that nurses initiate conversations regarding a switch from intravenous to oral therapy when patients are on a 100% bioavailable agent was thought to fall more within prescribers'

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Table 2. Barriers Identified to Specific CDC/ANA Recommendations Regarding Increased Nursing Involvement in Antimicrobial Stewardship

CDC/ANA Recommendation	Potential Barriers Identified			Selected Quotes
	Potentially Out of Scope	Structural Challenges or Workflow Considerations	Knowledge Gaps	
Nurses can play a major role in antimicrobial stewardship by obtaining and recording an accurate penicillin drug allergy history.		X	X	"Also, [I've] never had a nurse talk to me about [allergies]—like not once." "Well, I think it's also important that like it's a thorough assessment … sometimes they'll have like really no allergy. Like, the patient said that they were like nauseous."
Nurses can encourage the switch from IV to PO antimicrobials.	X	X	X	"I don't … usually think nursing [is] the first person that I think to engage in that dialogue … I view that more as … an MD kind of decision … " "[O]ur PharmD comes into play helping with that." "There are some people who really believe that like IV is better. IV is stronger."
Nurses can initiate an antibiotic time-out with prescribers.	X	X		"And it should be something that's easy for nurses to use too … if on top of everything else she's doing, she has to also check if it's … 48 hours, but she needs to dig or look when the antibiotics was started, then it becomes cumbersome and it will probably get a pushback from nurses too … " [T]hey're going to want to do a time-out, and then maybe they can't get ahold of a provider, and then the antibiotic is either not given or like given many hours later …
Nurses can ensure that cultures are obtained appropriately and when indicated.	X		X	"It's ultimately … our [prescribers'] decision if you're gonna send something or not." "[ER nurses] draw from IVs a lot … a lot of our blood cultures there – we can't really trust."

responsibilities rather than nurses. Additionally, prescribers pointed to gaps within their own fund of knowledge that could create tension within an expanded nursing role. One hospitalist noted, "[I]f the providers have the knowledge gap to start with, a nurse telling you, 'You can do this,' is probably not gonna help."

The second recurring barrier to implementation encompassed structural challenges related to the workflow of prescribers and nurses, and the lack of frequent face-to-face interactions. For example, among prescribers who do not practice in a geographically localized unit, it was perceived that nurses do not regularly have the opportunity for an intervention such as an antibiotic time-out. One participant recounted, "[A] time-out is when the team is already together and working together … but when are we all together discussing that? – That's the problem." Conversely, due to the structure of their respective units, participants from critical care and pediatric settings were more enthusiastic about the ease of nurses' initiation of an antibiotic time-out.

Discussion

In this descriptive qualitative study of prescribers at 2 separate hospitals, prescribers were receptive to the idea of clinical nurses having some AS responsibilities. Prescribers expressed the most enthusiasm about interventions that fit within current models of practice (eg, nurses taking a thorough drug allergy assessment, rather than initiating an antibiotic time-out or facilitating the switch from IV-to-PO antibiotics). However, our study suggests that implementation of effective partnership between nurses and prescribers will likely require ongoing interdisciplinary conversations to overcome many practical challenges, particularly unaddressed knowledge needs, workflow constraints, and ambiguity about nursing scope of practice. Notably, however, the local culture on a particular unit often influenced the level of enthusiasm for a particular recommendation. For instance, the recommendation regarding the IV to PO switch was well-received on a pediatric ward, where nursing perspective regarding a patient's ability to tolerate oral intake was perceived to be particularly useful and relevant. It follows that stewardship interventions should be tailored to the needs and resources of a particular unit or specialty. When planning further nurse-driven AS interventions, we plan to take these findings into account.

To our knowledge, this is the first qualitative study of prescribers that assesses attitudes regarding nurse-driven AS activities. Strengths of the study were the inclusion of prescribers at various levels of training across different inpatient care settings, as well as use of a dedicated coding procedure from verbatim transcripts. One limitation was that prescribers were recruited from 2 hospitals within the same medical center and may not be generalizable.

In summary, providers were receptive to the idea of increased nursing involvement in AS activities. Some perceived barriers to the ANA/CDC recommendations can likely be overcome through increased nursing and provider education, but others may require more substantial changes.

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