

Multidisciplinary Authorship Among Infectious Diseases Society of America Clinical Practice Guidelines: Examining the Contributions of Infectious Diseases Pharmacists

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We describe the proportion of pharmacist representation among current and corresponding prior editions of Infectious Diseases Society of America (IDSA) clinical practice guidelines (CPGs). Pharmacist representation was 13% and 21% in previous and current editions, respectively, increasing significantly since 2011. We advocate for continued collaborations between IDSA and pharmacy organizations to enhance multidisciplinary representation in CPGs.

Keywords. authorship; clinical practice guidelines; GRADE criteria; infectious diseases; pharmacist.

Medical societies develop clinical practice guidelines (CPGs) to facilitate and inform evidence-based patient care through the synthesis of best available evidence, often by consensus conference or expert panels. Standards for developing trustworthy CPGs, developed by the National Academy of Medicine (NAM; formerly the Institute of Medicine), recommend that guideline development committees be composed of experts from a variety of disciplinary backgrounds, including both clinical and methodological specialists [1]. A diverse, interdisciplinary

committee is especially important when recommendations must be made from low-level evidence or when applying Grading of Recommendations Assessment, Development and Evaluation (GRADE) criteria in evaluating data [2].

Infectious diseases pharmacists play a key role in team-based patient care and are recognized as important members of the infectious diseases community. Contributions of infectious diseases pharmacists extend well beyond direct patient care into research, medical education, and other scholarly activities, making them valuable members of guideline committees [3, 4]. Pharmacist involvement in high-impact guidelines that include pharmacotherapeutic recommendations is variable, although a formal assessment has yet to be published in this topic area [5–8]. This paper examines multidisciplinary authorship of Infectious Diseases Society of America (IDSA) CPGs, specifically evaluating the role of infectious diseases pharmacists.

METHODS

This study examined the authorship on CPGs issued or endorsed by the IDSA through September 2017. The primary end point was the frequency of pharmacist representation in current guideline editions. The proportion of CPGs with pharmacist representation was compared between current guidelines and the immediate corresponding prior edition. Pharmacist representation in CPGs was defined as the inclusion of at least 1 pharmacist on the respective guideline authorship panel and was reported as a proportion of total guidelines. In some cases, current guidelines were the initial guideline from the IDSA in a particular disease state or topic area and did not have a corresponding prior edition, thus leading to more current editions than prior. The current guidelines were identified through public access via the IDSA website (www.idsociety.org). Prior guideline editions were identified and retrieved through a MEDLINE search using University of South Carolina access. Guidelines were sorted by topic area as designated by the IDSA for secondary analysis. All CPG author credentials were evaluated, and the total number of pharmacists was reported as a proportion of all guideline panel members. Pharmacist author characteristics (eg, additional degrees, place of employment, and credentials) were collected from institutional websites and/or available web profiles. The chi-square or Fisher exact test was utilized for comparison of results between current and prior guidelines. Three investigators (L.F., J.L., P.B.B.) were responsible for data collection and analysis.

RESULTS

Fifty-eight current edition IDSA guidelines were identified as of September 2017, and all included antimicrobial therapy

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recommendations. The proportion of pharmacist representation on CPGs was 21% (12/58). Thirty-nine corresponding prior guideline editions were identified, with 13% (5/39) having a pharmacist author ($P = .402$ compared with current edition) (Table 1). Pharmacist representation on CPGs significantly increased after 2011 (33%, 9/27, compared with 11%, 8/70; $P = .017$). Examining pharmacist representation on CPGs over incremental time periods results as follows: 1996–2000: 19%, 3/16; 2001–2005: 6%, 1/17; 2006–2010: 13%, 4/31; 2011–2015: 30%, 7/23; and 2016–2018: 2/10, 20%).

Of 1245 total authors among both current and prior editions, 3% ($n = 33$) were pharmacists. Twenty-nine unique pharmacists were represented overall, which remained consistent between current ($n = 15$) and prior ($n = 14$) editions ($P > .05$). When examining IDSA CPGs by topic categories, the antimicrobial agent use category was the most represented by pharmacist authorship, 50% of current guidelines (3/6) and 40% of prior editions (2/5). Among the 17 guidelines with a pharmacist, 71% (12/17) included a single pharmacist author. Three pharmacists appeared on multiple guidelines. Pharmacist authors were 55% male, the majority of whom possessed added credentials (eg, board certification or a fellowship designation: 86%, 25/29), and 86% worked in an academic and/or clinical setting. Pharmacy organizations endorsed 6% of the 97 total guidelines examined, including 4 among current editions (7%).

DISCUSSION

The goal of this study was to examine the current inclusion of pharmacists on CPGs endorsed or sponsored by the IDSA. Pharmacists were represented among 21% of current CPGs in this cohort, including an 8% increase compared with prior editions. Additionally, after the introduction of the NAM recommendations

for interdisciplinary guideline committees in 2011, there was a significant increase in pharmacist representation from 11% to 33%. Although this is certainly encouraging, it also represents opportunity. This relatively low rate of overall pharmacist authorship (19%) is not unique to IDSA-sponsored guidelines. When excluding Clinical Pharmacogenomic Implementation Consortium and Veterans Affairs/Department of Defense guidelines, which have universal pharmacist participation, only 20% of national guidelines across a spectrum of disciplines include a pharmacist author [8]. Notably, high-impact guidelines such as the International Antiviral Society-USA Panel guidelines on treatment and prevention of HIV in adults and the updated Surviving Sepsis guidelines do not have pharmacist members on the expert panel despite numerous pharmacotherapeutic recommendations and recognized contributions of pharmacists in these specialty areas [8, 9]. Not surprisingly, the antimicrobial use category within the IDSA had the highest rate of pharmacist authorship, albeit with small numbers. We did not differentiate between IDSA-sponsored and -endorsed guidelines, which may impact pharmacist inclusion, which is a limitation of the present study.

Pharmacists have long contributed to patient safety and improved outcomes through medication optimization with enhanced participation in infectious diseases clinical practice among stewardship, consult, and ambulatory clinic teams [9, 10]. The view of the pharmacist's role in patient care by the IDSA has greatly changed over the last 20 years. The controversial position statement of the IDSA Clinical Affairs Committee in 1997, "Hospital Pharmacists and Infectious Diseases Specialists," failed to recognize pharmacists as health care partners in the management of infectious diseases patients [11]. That position statement has since been removed by the IDSA, and pharmacists enjoy many organizational opportunities and recognitions equal to those of physician members. We feel that it is important for the IDSA to continue to stay committed to multidisciplinary infectious diseases practice, including in the constantly expanding field of antimicrobial stewardship [12, 13]. The pharmacy profession has also continued to see growth in academic scholars, contributing significantly to the peer-reviewed literature. This coincides with the increase in pharmacist presence on guideline panels observed after 2011.

The value of pharmacokinetics/pharmacodynamics (PK/PD) in antimicrobial selection and drug dosing continues to be recognized as a major contributor to antimicrobial safety, development of resistance, and patient outcomes. One example of recognition of pharmacists as PK/PD and microbiology experts is their representation on the Clinical Laboratory Standards Institute expert committees [14]. Additionally, the rise in microbial genomics and availability of enhanced rapid molecular diagnostics will continue to revolutionize recommendations for both empirical and definitive antimicrobial therapy [15]. Pharmacists, as experts in medications and microbial genomic testing interpretation, are uniquely positioned to bring quality discussion and insight to expert guideline committees.

Table 1. Rates of Pharmacist Authorship on Current and Prior Edition Infectious Diseases Society of America Clinical Practice Guidelines

| Guideline Characteristic, n/N (%) | Prior Guideline Edition | Current Guideline Edition | P Value |
|--|-------------------------|---------------------------|---------|
| Overall pharmacist representation | 5/39 (13) | 12/58 (21) | .402 |
| Pharmacist representation by IDSA CPG subcategory | | | |
| Antimicrobial agent use | 2/5 (40) | 3/6 (50) | - |
| Infections by organ system | 1/14 (7) | 5/26 (19) | - |
| Infections by organism | 1/14 (7) | 4/19 (21) | - |
| Other | 1/6 (17) | 0/7 (0) | - |
| Pharmacist proportion of total authorship | 14/434 (3) | 19/811 (2) | - |
| Pharmacist as first, senior, or corresponding author | 0/5 (0) | 1/12 (8) | - |
| Single pharmacist author | 3/5 (60) | 9/12 (75) | - |
| Multiple pharmacist authors | 2/5 (40) | 3/12 (25) | - |
| Pharmacy organization endorsement | 2/39 (5) | 4/58 (7) | - |

Abbreviations: CPG, clinical practice guideline; IDSA, Infectious Diseases Society of America.

Guideline revisions are constantly needed given the updates in available diagnostics, approval of new antimicrobials, and emerging clinical evidence. The IDSA and pharmacy organizations value inclusion in organizational activities, which may translate well to development of interdisciplinary CPG expert panels. A 100% increase in pharmacist authorship on subsequent IDSA guideline editions would mean that approximately 40%–50% of CPGs would have pharmacist representation. The IDSA may consider a specific recommendation for sponsored guidelines to include multidisciplinary representation, including infectious diseases pharmacists, when an expert and scholar is available in the topical area. Of note, the most recently published IDSA guideline (not included in this analysis) on *Clostridium difficile* management includes pharmacist representation on the expert panel and is endorsed by 2 pharmacy organizations. Four of the 11 current IDSA guidelines with a pharmacist author in this present study had a corresponding pharmacy organization as a sponsoring or endorsing group. It is important for the IDSA to connect with leading national pharmacy organizations such as the American College of Clinical Pharmacy, the American Society of Health-System Pharmacists, and the American Pharmacists Association, as well as discipline-specific organizations such as the Society of Infectious Diseases Pharmacists, to identify pharmacists who may complement physician panelists and are appropriate for representation on CPGs.

CONCLUSIONS

Pharmacist representation on IDSA-sponsored and -endorsed CPGs is just above 20% and has increased among current editions. Multidisciplinary representation, including infectious diseases pharmacists on CPG committees, as recommended by the NAM, will compliment physician experts and enhance appropriateness of antimicrobial therapy recommendations. Continued collaboration between infectious diseases and pharmacy organizations on CPG expert panels is strongly encouraged.

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