

## ID CORNER

# Career Development - Certificate Programs in Infectious Diseases

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**T**here are numerous opportunities outside of the traditional PGY2 or fellowship training pathways for clinical advancement.

Pursuing a certificate program may be of interest to pharmacists who want to improve their knowledge base in a specialty area or become a more marketable candidate for future endeavors. This article describes two certificate programs focused on antimicrobial stewardship in addition to a variety of other infectious diseases-related certificate programs that may be of interest to pharmacists that practice in infectious diseases (ID) or pharmacists that practice in other clinical areas but have an interest in advancing their ID knowledge.

### Antimicrobial Stewardship Certificate Programs

Optimizing antimicrobial utilization is crucial to effectively treat infections, protect patients from the harms of unnecessary antibiotic use, and combat antibiotic resistance.<sup>1-4</sup> Antimicrobial Stewardship Programs (ASPs) have been shown to successfully increase infection cure rates as well as reduce rates of antimicrobial adverse effects, hospital acquired infections

and costs. In 2019, the Centers for Disease Control and Prevention (CDC) updated the Core Elements of Hospital ASPs which forms the foundation of antibiotic stewardship accreditation standards.<sup>4</sup> Of note, new updates highlight the importance of “pharmacy expertise” in ASPs to guide implementation and optimization of antimicrobial use. These updates also recommend the appointment of a pharmacist as a co-leader of ASPs.<sup>4</sup> The following describes various opportunities for pharmacists with an interest in participating in or leading ASPs to gain additional training related to antimicrobial stewardship (see Table 1 for detailed information).

The Society of Infectious Diseases Pharmacists (SIDP) currently offers two antimicrobial stewardship certificate programs. Each program provides guidance for promoting appropriate antimicrobial use based on the pharmacist’s practice site. The SIDP Antimicrobial Stewardship Certificate Program for Acute Care focuses on the management of an ASP within an interdisciplinary health care team. The SIDP Antimicrobial Stewardship Certificate Program for Long-Term Care is similar to the acute care program but emphasizes implementation of an ASP within the long-

term care practice setting. Both certificate programs support knowledge advancement in clinical microbiology, pharmacology, pharmacokinetics, pharmacodynamics and infectious diseases management. In addition, both programs have three phases and are accredited by the Accreditation Council for Pharmacy Education (ACPE). Phase one of the program consists of self-study modules. Phase two includes webinars that allow for question and answer sessions with authors. Lastly, phase three requires completion of a project which consists of implementing, evaluating or modifying an antimicrobial stewardship initiative.<sup>5</sup>

Making a Difference in Infectious Diseases (MAD-ID) currently offers two antimicrobial stewardship certificate programs. Each program is tailored to the pharmacist’s desired skill set based on baseline antimicrobial stewardship knowledge. The MAD-ID Basic Antimicrobial Stewardship program has been available since 2019 and offers online training for any healthcare practitioner already involved in or looking to develop an ASP. This program is appropriate for all practitioners no matter their baseline experience with or knowledge of antimicrobial stewardship. The program

**TABLE 1. Opportunities to Gain Additional Training Related to Antimicrobial Stewardship**

Name	Description	Length of Program	ACPE Credits	Cost	Format
<b>SIDP Antimicrobial Stewardship Certificate Program for Acute Care<sup>5</sup></b>	3-phase program comprised of self-study modules, webinars and completion of a practice based project	Up to 12 months	<b>Phase 1:</b> 24 hrs or 2.4 CEUs <b>Phase 2 :</b> 6-9 hrs or 0.6-0.9 CEUs <b>Phase 3:</b> 10 hrs or 1 CEU	\$\$\$	Certificate program Online and practical component
<b>SIDP Antimicrobial Stewardship Certificate Program for Long-term Care<sup>5</sup></b>	3-phase program comprised of self-study modules, webinars and completion of a practice based project	Up to 12 months	<b>Phase 1:</b> 17 hrs or 1.7 CEUs <b>Phase 2:</b> 4-8.5 hrs or 0.4-0.85 CEUs <b>Phase 3:</b> 10 hrs or 1 CEU	\$\$\$	Certificate program Online and practical component
<b>MAD-ID Basic Antimicrobial Stewardship Certificate Program<sup>6</sup></b>	4-phase program comprised of three self-study modules and implementation of an antimicrobial stewardship initiative	Highly recommended to complete the practical component within 12 months of completing the modules	<b>Phase 1:</b> 8 hrs or 0.8 CEUs <b>Phase 2:</b> 5 hrs or 0.5 CEUs <b>Phase 3:</b> 2.5-3 hrs or 0.25-0.3 CEUs	\$\$	Certificate program Online and practical component
<b>MAD-ID Advanced Antimicrobial Stewardship Certificate Program<sup>6</sup></b>	2-phase program comprised of live sessions and implementation of an antimicrobial stewardship initiative	Requires completion of the practical component within 12 months after the live sessions	<b>Phase 1:</b> 16 hrs or 1.6 CEUs <b>Phase 2:</b> 30 hrs or 3 CEUs	\$\$\$	Certificate program Live and practical component

*Cost Key: \$= < \$200, \$\$= \$200-\$600, \$\$\$= >\$600*

consists of four modules with optional quarterly teleconferences with faculty to engage learners in the program. Upon completion of the first three modules, the learner transitions to a practical component in which they implement an antimicrobial stewardship initiative. The MAD-ID Advanced Antimicrobial Stewardship Training Program is best suited for physicians or pharmacists who are already involved in an antimicrobial stewardship program and have a foundation of knowledge. This program was formerly delivered via a combination of live programming and online lessons, along with a practical component. Currently, the entire didactic component of this program is presented at the MAD-ID Annual Meeting. Participants must attend 16 of 20 live sessions during the Annual Meeting that address topics such as antimicrobial stewardship application in various practice settings and patient populations, collecting and analyzing stewardship metrics, and approaches to promote ASPs and antimicrobial stewardship initiatives. Upon completion of the live sessions, the learner is required to complete the practical component of the program such as a project or initiative at their practice site.<sup>6</sup>

### Additional Certificate Programs

In addition to Antimicrobial Stewardship Certificate Programs, there are multiple other opportunities for advanced training in areas that could be of interest to both pharmacists who practice in ID and other specialty areas. The following chart (Table 2) outlines certificate opportunities related to infectious diseases, public health, and research methodology.

### Conclusion

Opportunities for career advancement is desirable for many pharmacists. The certificate programs that have been reviewed can offer pharmacists in various clinical settings support and guidance to advance their clinical knowledge and skills. When entering into pharmacy practice, pharmacists have dedicated themselves to being lifelong learners. Certificate programs provide a structured program for continued learning that is sought by many in the pharmacy profession.

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**TABLE 2. Certificate Opportunities Related to Infectious Diseases, Public Health, and Research Methodology**

<i>Name/institution</i>	<i>Description</i>	<i>Length of Program</i>	<i>ACPE Credits</i>	<i>Cost</i>	<i>Format</i>
<b>Penicillin Allergy Assessment &amp; Skin Testing (PAAST)-University of South Carolina<sup>7</sup></b>	Didactic instruction on allergy assessment and antibiotic selection with a focus on implementation of penicillin allergy assessment and skin testing programs. The live program offers participants the opportunity to execute and interpret penicillin skin testing. Both home study and the live program are required.	15 hours home study, 4 hours live	1.5 CEUs	\$	<i>Certificate program</i> Online and live
<b>International Travel Medicine Review Certificate Course-University of Southern California<sup>8</sup></b>	Prepares pharmacists to provide travel medicine recommendations to patients seeking international travel preparation. Designed to supplement an accredited immunization training program.	15 hours home study	1.5 CEUs	\$\$	<i>Certificate program</i> Online
<b>Pharmacy-Based Travel Health Services-American Pharmacists' Association<sup>9</sup></b>	An advanced competency training program that prepares pharmacists to provide travel medicine recommendations for patients seeking international travel preparation. Completion of an approved immunization delivery certificate program is required.	6 hours home study, 4 hours live	1.0 CEU	\$(APHA member), \$\$ (nonmember)	<i>Certificate program</i> Online and live
<b>Pharmacokinetics Certificate-American Society of Health-Systems Pharmacists<sup>10</sup></b>	Improve pharmacists' knowledge and skills in applying pharmacokinetics concepts to patient care. Focuses on general principles as well as aminoglycosides, antiepileptics, digoxin, lithium, and vancomycin.	15 hours	1.5 CEUs	\$\$	<i>Certificate program</i> Online
<b>Infectious Disease and Infection Control Certificate-University of Central Florida<sup>11</sup></b>	Provides a high-level overview of infectious diseases syndromes (tuberculosis, pneumonia, HIV, etc.) and basics of infection control.	13 hours	None	\$	<i>Certificate program</i> Online
<b>Certificate Program in Clinical Research Methods- Various<sup>12,13</sup></b>	Many universities sponsor online certificate programs for working healthcare professionals that relate to epidemiology, statistics, and clinically-oriented research methodology. Requirements and tuition vary by institution.	Programs that are local to Wisconsin: <ul style="list-style-type: none"> <li>• Medical College of Wisconsin- Certificate in Clinical and Translational Science (four emphasis tracks), Certificate in Public Health</li> <li>• University of Wisconsin Madison- Certificate in the Fundamentals of Clinical Research, Certificate in Clinical and Community Outcomes Research</li> </ul>			
<i>Cost Key: \$= &lt; \$200, \$\$= \$200-\$600, \$\$\$= &gt;\$600</i>					

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