Meeting the modified drug information requirements of ASHP-accredited pharmacy practice residency programs

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Training in drug information (DI) teaches a systematic approach to searching and evaluating drug literature, problem analysis, and communication, which helps ensure the appropriateness and completeness of responses while minimizing errors. These skills serve as a foundation for residents to draw upon as they work to meet their clinical and practice responsibilities.[1,2] As a specialty practice area, DI includes not only the provision of accurate, unbiased drug information but also establishing and maintaining a formulary system, conducting pharmacoeconomic and pharmacotherapeutic evaluations and drug-use evaluations (DUEs), establishing reporting systems for adverse drug events and medication errors, educating health care professionals, conducting scholarly activities and research, providing investigational

Abstract: The current standards for meeting drug information (DI) requirements in American Society of Health-System Pharmacists (ASHP)-accredited pharmacy practice residency (PPR) programs and the impact of changes in ASHP standards for the DI requirements were studied.

In September 2002 a nine-question survey was e-mailed to the directors of all ASHP-accredited PPR programs listed with an available e-mail address on ASHP's residency directory Web page as of August 2002. The program directors were asked to provide information on the demographics of their practice settings, the current methods of completing the DI requirements of their programs, whether the DI requirements had changed between the 2001–02 and 2002–03 residency years, and whether any changes in the DI requirements were anticipated.

A total of 178 (49%) of 365 PPR programs responded. Of the respondents, 87% were located in a hospital setting, 33% were affiliated with a school of pharmacy, and 40% had a formal onsite DI center. Half of the respondents fulfilled DI requirements through a longitudinal rotation, 20% through a block rotation, and 27% through both. Eighty-two percent of the respondents were familiar with the revised ASHP DI requirements, and 26% had modified their DI requirements between the 2001–02 and 2002–03 residency years. Seventeen percent anticipated changing their DI requirements in the future. Influences for modifications to the programs' DI requirements were mainly ASHP revisions and feedback from preceptors and residents.

A national survey suggested that DI requirements in PPR programs are primarily achieved through a longitudinal rotation design.

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drug services, and maintaining poison control centers.[1,3,4]

The accreditation standards of the American Society of Health-System Pharmacists (ASHP) for pharmacy practice residencies (PPRs) establish a foundation for a well-rounded residency experience and the receipt of appropriate feedback and guidance.[5] The accreditation standards promulgated through ASHP's Residency Learning System (RLS) outline core competencies for pharmacy practice residents with corresponding goals.[6] By achieving these objectives, the resident will be able to meet the core competency requirements, enhancing his or her ability to provide optimal medication therapy outcomes in a variety of clinical practice settings.

The first edition of the RLS model (1996) established four core areas of competency: (1) direct patient care (providing quality patient care through a pharmacy practice methodology and through participation in pharmacy systems), (2) DI and drug policy development (providing DI and DUEs, participating in developing and evaluating medication-use policies), (3) practice management (developing personal practice management skills, managing integrated pharmaceutical care services), and (4) practice foundation skills.[7] To keep up with the ongoing evolution of clinical pharmacy, the PPR standards and core competencies were modified in 2001.

ASHP's 2001 PPR standards state that "at the completion of the pharmacy practice residency, the resident must demonstrate competency in each of the following areas: patient care; practice management; and completion of an appropriate project."[5] The core competencies for which learning objectives are developed now include practice foundation skills, practice management, and patient care. The DI components have been incorporated primarily into patient care and, to a lesser extent, into practice management. De-

spite the changes in the core competency categories, DI skills remain an essential component of the RLS. The 2001 edition states, "Pharmacy practice residents shall receive instruction in the theory, origin, and practical application of an organized program of DI services in support of patient care. They must gain skills in the selection and use of DI resources, including skills in search and retrieval."[5]

Our institution has historically offered the DI rotation as either a block rotation (a concentrated experience, typically over four weeks) or a longitudinal rotation (a sequential experience, such as four hours per week throughout the residency year). Residents' feedback about the rotation has indicated pros and cons for each type of format. The residents also believe that it is critical to meet the DI requirements and to allow flexibility through elective rotations (i.e., a longitudinal rotation may allow time for an additional elective). Thus, we wanted to assess national trends in meeting DI requirements to help us evaluate our rotation structure.

The primary objective of this study was to determine the current standards for meeting DI requirements in ASHP-accredited PPR programs and to assess trends in providing DI learning experiences. A secondary objective was to evaluate program changes in DI requirements resulting from recent changes in ASHP accreditation standards.

Methods

In September 2002 a survey was electronically mailed to the directors of all 365 ASHP-accredited PPR programs identified from the ASHP residency directory Web page as of August 2002.[8] An e-mail address for the PPR director was required for inclusion in the study. The nine-question survey was designed to collect the following data: health care setting, bed capacity (if applicable), affilia-

tion of the program with a school of pharmacy, affiliation with a formal DI center or service, current DI requirements (including block versus longitudinal design), any changes anticipated in DI requirements, familiarity with ASHP's revised DI requirements for PPR programs, and whether any changes in the program occurred between the 2001–02 and 2002–03 residency years.

Each survey was assigned a sequential number for tracking purposes. All responses were confidential; no institution-specific details (e.g., name, location) were requested in the survey. A key with sequential numbers was maintained to identify the contact information for PPR program directors (name, e-mail address, and telephone number); this was used only for follow-up.

Recipients were asked to return the surveys by e-mail or fax within one week. A follow-up e-mail was sent to directors who did not respond within two weeks. If no response was received, a follow-up telephone call was placed two weeks after the second e-mail in a final attempt to collect surveys.

Data from returned surveys were entered into a Microsoft Access database (Microsoft, Redmond, WA) for analysis with Microsoft Excel. Descriptive statistics were used to report the results.

Results

Demographics. Completed surveys were received from the directors of 178 (49%) of the 365 ASHP-accredited PPR programs. A majority of the programs (87%) were located in a hospital setting. An affiliation with a school of pharmacy was noted by 33% of the respondents. Forty percent of the respondents had a formal onsite DI center or service or were affiliated with one. Table 1 summarizes the demographic data.

Primary endpoints. Fifty percent of the respondents reported a longitudinal design, 20% a block design,

and 27% both a block and longitudinal design for meeting DI requirements. Among the programs with a block design, 84% had a formal DI center or service or were affiliated with one. More than 80% of the residency programs reported participation in pharmacy and therapeutics committee activities, adverse-drug-event reporting, formulary review, journal clubs, DI requests during patient care rounds, DUE, and provision of professional inservice education as required components of the DI rotation. Participation in writing formal DI questions and quality assurance activities was reported by less than 50% of the respondents. Table 2 summarizes the current DI activities of the responding programs.

Secondary endpoints. A change in how the residency program met DI requirements was anticipated for 17% of the programs; the changes were attributed to preceptor feedback (59.6%), resident feedback (57.4%), and revision of ASHP standards (32%). The types of changes most commonly reported included restructuring improvements, documentation changes, and implementation of formal Internet-based DI programs. Eighty-two percent of the respondents were familiar with the revisions in the ASHP standards for DI requirements for PPR programs in 2001, and 26.4% indicated that DI requirements were changed between the 2001–02 and 2002–03 residency years to meet these revised standards. Eighteen percent of the respondents were unaware that the changes had occurred.

Discussion

This survey suggests that a longitudinal rotation may be associated with programs that do not have a formal onsite DI center or service. The longitudinal design may allow for ease of integration of the DI skills into the modified core competencies of programs without a formal DI center or service. In contrast, pharmacy practice residents at institutions with a formal DI center or service, a DI specialist, or an affiliation with a formal DI center may equally benefit from a block rotation design, with subsequent longitudinal requirements incorporated into core and elective rotations. The block design provides an intensive focus on enhancing DI skills, thus allowing residents to concentrate their efforts specifically on meeting DI requirements. Although the type of rotation design that best facilitates the attainment of DI skills was not assessed, the results show that the reported content and requirements of the DI rotations were similar and included responding to DI questions, formulary review, literature evaluation, and enhancement of communication skills.

Eighteen percent of the respondents were unaware of the revised ASHP DI requirements for PPR programs, possibly indicating a need for better communication of the standards. Respondents reported that modifications to the DI requirements were primarily based on revisions in ASHP standards and preceptor and resident feedback.

One limitation of the survey is that it did not assess whether a specific change in rotation structure or type of requirement occurred. Another limitation is that the survey respondents were primarily hospital based, limiting generalizability to other practice sites. Although the response rate of 49% was acceptable, this survey does not reflect all ASHP-accredited programs.

The DI components of the 1996 core competencies were not removed from the 2001 standards, but rather reorganized into different areas, namely patient care and, to a lesser extent, practice management. Although DI has been removed as a core competency, it is still present as an essential component of the RLS system.

Table 1.
Demographic Characteristics of Respondents (*n* = 178)

Characteristic	No. (%) Respondents
Health care setting	
Hospital	154 (86.5)
Community	27 (15.2)
Academic	38 (21.3)
Teaching	76 (42.7)
Private	17 (9.6)
Managed care	23 (12.9)
Home care	4 (2.2)
Primary care	19 (10.7)
Other	12 (6.7)
No. licensed beds	
<100	6 (3.4)
100–299	42 (23.6)
300–499	46 (25.8)
500–699	43 (24.2)
≥700	29 (16.3)
NA[a]	12 (6.7)

[a]NA = not applicable.

Table 2.
Activities of Drug Information (DI) Rotation

Activity	No. (%) Pharmacy Practice Residency Programs Reporting Activity (*n* = 178)
Pharmacy and therapeutics committee involvement	163 (91.6)
Adverse-drug-reaction reporting	151 (85.4)
Newsletter	135 (75.9)
DI question workup in DI center	91 (51.1)
Formulary	164 (92.0)
Inservice education	162 (91.0)
Quality assurance	71 (39.9)
Medication error reporting	142 (79.8)
Journal club	136 (76.4)
DI question workup during patient care rotations	146 (82.0)
Drug-use evaluation	152 (85.4)

The provision of DI is a fundamental responsibility of pharmacists. The development of DI specialists and centers has been described as the beginning of the clinical pharmacy concept.[9] DI skills helped pharmacists gain a more active role and greater clinical responsibility. These skills are essential to making informed decisions in clinical practice, whether the information is patient specific or relative to a specific disease or a formulary decision. The attainment of DI skills is imperative for a pharmacy practice resident to become a competent, well-rounded clinician.

Conclusion

A national survey suggested that DI requirements in PPR programs are primarily achieved through a longitudinal rotation design. Regardless of the rotation design, however, the responsibilities and learning experiences provided were similar among the programs surveyed.

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