Establishing a Combined Drug Information Residency in Industry and Academia

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A specialty residency in drug information which combines the experiences attained in academia with that of industry provides a well-rounded and diverse learning venture for a resident. To expand the educational opportunities available for pharmacy students, a joint drug information residency program combining an industry setting, Pharmacia, with a university setting, University of Illinois Drug Information Center, was initiated. The development, goals and objectives, process of implementation and benefits of this integrated residency are discussed. A primary goal for this combined residency is to mentor a resident to achieve professional autonomy and confidence to work in a dynamic environment within a drug information center. Upon completion of this program, a resident would have mastered the skills necessary to independently and competently perform in any drug information setting.

INTRODUCTION
Pharmacists have an array of career opportunities. With the extensive training and medical focus in the curriculum, a pharmacist is equipped to work in a variety of professional settings. The avenues for career development are varied and involve many different professional settings (Figure 1).

Training for various positions in pharmacy include the Doctor of Pharmacy (PharmD) as the first professional degree. With the movement toward the PharmD degree as the sole entry-level professional degree and various marketplace demands, many students opt for a residency to specialize in a specific focus of training. These residencies can have a clinical, administrative, managed care, or drug information focus(2).

There are currently 35 ASHP accredited drug information specialty residencies(3). Some of these residencies have brief rotations (one or two months) through various other settings within the year residency, including managed care, market research and pharmaceutical industry. While these rotations provide exposure to the various settings, a longer commitment to an individual specialty would allow for a heightened educational experience. A resident would have opportunities to participate in extended projects, and with the potential to see certain projects to completion. As an approach to providing a well-rounded and diverse drug information residency experience, a joint drug information residency program combining an industry setting, Pharmacia, and a university setting, University of Illinois at Chicago (UIC) Drug Information Center, was initiated.

Drug information provides a challenging and stimulating career path for nurses, scientists, pharmacists and other health-care professionals. A specialized training in the practice of drug information, such as a specialized drug information residency, brings fine tuned skills and proficiency to the drug information setting.

INITIATING THE DEVELOPMENT AND STRUCTURE OF THE COMBINED DRUG INFORMATION RESIDENCY PROGRAM
As an established clerkship site for University of Illinois at Chicago undergraduate PharmD experiential program, Pharmacia has developed a solid relationship with the University. To expand upon this student program, the concept for a more advanced training, a residency option in drug information was proposed by the director of drug information at UIC. An initial proposal for this joint site drug information residency program was submitted to Pharmacia.
A good working relationship between the residency directors from the industry and university drug information settings was established. Scheduled meetings were required to discuss the structure, goals, recruiting, administrative, minimum resident qualifications and funding of this program. Once in concurrence, the proposal underwent procedures for approval by the respective department management. It was subsequently presented to the Global Healthcare Resources at Pharmacia where it was approved. This new program should complement the existing student programs at the individual sites, with agreement from all the preceptors, or those involved in training of the resident.

The proposed budget was based upon examination of the scope of the project and the administrative support which is required to sustain it. The university would take responsibility for the provision of resident benefits and the salary of the resident. Attendance for two professional meetings, in addition to recruiting expenses and miscellaneous resident activities, such as poster presentation fees was calculated into the budget. The total estimated expenses were divided equally between Pharmacia and UIC, since the resident spends 50 percent of the time at each site.

The combined residency program director’s qualifications at each site must fulfill the requirements set forth in Part II of the “ASHP Accreditation Standard for Specialized Pharmacy Residency Training”(4). To summarize, the program director at each site must be a pharmacist with demonstrated expertise in drug information pharmacy practice, as confirmed by drug information practice residency training followed by a minimum of three years of practice experience or equivalent maintenance of active patient care involvement through clinical consultations, other patient-oriented services provided through the drug information service, or routinely provided pharmaceutical care services. Although this combined drug information residency has dual practice sites and two program directors, it was agreed upon that the primary external contact would be the University of Illinois program director.

ESTABLISHING THE STRUCTURE OF THE COMBINED DRUG INFORMATION RESIDENCY PROGRAM

The resident curriculum at the individual sites was planned and scheduled by the respective directors to meet the student’s goals and objectives in agreement with ASHP guidelines. The most recent ASHP Supplemental Standard and Learning Objectives for Residency Training in Drug Information Practice were used as guidelines to develop the objectives for the SEARLE/UIC specialty drug information residency(4). Between the two sites, industry and academia, the goals with associated terminal and enabling objectives were defined. These follow that objectives for residency training in drug information practice provided on pages 36-43 of the 2000 ASHP Residency Directory(4) or can be obtained by contacting the authors of this paper.

The who, what, where, and why regarding the resident’s activities should be clearly defined by the individual directors in planning the resident’s curriculum. Time structure of the resident was created preceptors were identified, initial meetings were scheduled with preceptors to identify potential projects, and national and local drug information and professional meetings for abstract/poster submissions and presentations were identified. The residency was structured so that the resident rotated quarterly between the two sites, beginning at the university. The activities that bring value to the purpose of each drug information site were identified, while, at the same time targeted to provide the resident with a positive learning experience. Although, many preceptors are involved in the training, depending on the activities of the resident, the resident reported to the primary preceptor at each location.

RESIDENT ACTIVITIES/RESOURCES

At the University, the resident is involved in the clinical pharmacy on-call program. All residents and fellows in their first year of postdoctoral training program at UIC participate in the on-call program at the affiliated hospitals. This service provides 24 hour clinical pharmacy coverage each day of the calendar year. The resident is responsible for the assessment and management of patients with pharmacologic and toxicologic problems. Faculty back-up assistance is available at all times. Week day on call duty begins at 5PM and lasts until 7AM the next morning. Weekend holiday coverage is from 9PM to 9AM the following day. The resident presence on the hospital campus is required. The resident does not participate in the on call program when working at the industry site.

Other resident activities include the resident report, or the presentation of clinical cases and discussions of their interventions and management of therapeutic problems, and participation in the resident seminar series. This seminar series is designed to provide informal discussions of Institutional Review Board procedures, protocol and budget development, practical statistics, FDA guidelines for clinical and bioavailability trials, and many other relevant topics. This series is also attended by faculty and staff.

Part of the resident’s responsibilities involve teaching. This is accomplished through resident participation in the selected educational activities at the UIC College of Pharmacy. All residents have a faculty appointment and participate in the educational mission of the university. At the industry site, the resident teaches the newer therapeutic concepts to the medical information associates who answer the healthcare professional telephone inquiries.

The Journal Club, both at the university drug information center and industry site, is designed to develop and enhance the residents skills for critical evaluation of medical and pharmacy literature. The presentation address recent topics of therapeutics or pharmacy administration.

Drug Information projects in industry are diverse. The resident fine tunes the traditional drug information practice skills, including preparation of comprehensive written responses to drug information inquiries. Other projects include involvement in the development of the medical message in the commercialization of pipeline products, finding medical support or references for slide sets, participation in medical education initiatives, web-based dissemination of information and publication planning and implementation. These projects are overseen by preceptors with expertise in specific therapeutic areas.

From the industry perspective, the resident needs a physical space to work, with a computer terminal and resources. This can pose a problem in a space limited environment. The resident needs access to electronic mail and the on-line company resources. Almost all projects require computer access. Furthermore, the resident must sign a confidentiality agreement, and needs to understand the importance of confidentiality of information.

From the university perspective, the resident also needs
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ed process is shown as a flow schema to emphasize the need while enhancing foundational skills. In Figure 2, this integrat-
ion group in industry. Integration is the key to the success of
ated residency with industry needs to formulate a
resident will receive a specialty residency certificate.
program and contact the appropriate drug information serv-
ecessary for successful advanced training; and
favorable evaluation during an interview with the residen-

Finding a candidate can be a challenge. Preliminary con-
tacts can be established at the ASHP Midyear Clinical Meeting, other pharmacy meetings or through the College of Pharmacy. Recommendations from the industry professionals act as another avenue for candidate selection. After the initial screening process, done through the university, selected candidates are invited to visit the UIC and Pharmacia campuses, for an on-site interview. Final approval of the applicant qualifications and his/her acceptance into the program is made upon a combined decision with input from the industry and pharmacy perspective.

Once implemented, this residency is then evaluated for accreditation by the authority of the Board of Directors of ASHP under the Commission of Credentialing(5). Upon successful completion of this specialized residency program, the resident will receive a specialty residency certificate.

A university or other organization who would like to initiate a combined residency with industry needs to formulate a plan for the program and contact the appropriate drug information group in industry. Integration is the key to the success of a partnership in the residency program.

RESIDENCY OUTCOMES
The resident understands the goals and objectives, incorporates them into the optimal workflow of drug information services, and with constant feedback, performs functions successfully while enhancing foundational skills. In Figure 2, this integrated process is shown as a flow schema to emphasize the need for consistence communication and involvement of the mentors in the student’s activities to ensure optimal performance. The initial review of the goals/objectives of a new project with the resident is the most crucial step to ensuring that the final delivered work meets the specific goals of the project. The next step for the mentor would be to clearly express the role and function of the resident for contributing to their drug information practice. Consistent, formal or informal, feedback is essential throughout the resident’s performance. A comprehensive evaluation with a more formal feedback approach is recommended upon delivery of the resident’s work to provide a conclusion as well as a process by which the resident could continuously learn and improve.

At the conclusion of the residency, the resident should have developed a personal responsibility for attaining excellence in one’s own ability to provide pharmaceutical care in drug information specialty practice, integrating patient care skills with an advanced level of drug information. The resident is evaluated formally (Appendix) at both sites quarterly to ensure objectives are met and the resident is achieving desired goals.

As the resident progresses through the year long residen-
cy, he/she should:

- understand the environment and resources necessary to operate a drug information center using the principles of needs assessment to determine services to be offered by a drug information service;
- understand the regulatory issues of providing fair balance with competitor product information, off-label use, and regulations on reporting adverse drug reactions;
- understand the priority status on the delivery of pharmaceu-
tical care in drug information specialty practice in undertaking multiple responsibilities in delivering several minor drug information projects;
- advance skills in performing comprehensive and focused literature searches in support of medical information requests; acquire the knowledge to teach and precept pharmacy students and pharmacy practice residents in drug literature retrieval and evaluation;
- utilizing all available resources, be able to formulate a system for staying current with literature pertinent to a drug information specialty practice;
- be able to develop and implement a continuous quality improvement plan for a drug information service to ensure accurate responses to verbal inquiries; explain corrective actions; identify those involved;
- be able to formulate a plan to document the services of a drug information service; generate reports that describe...
the center’s productivity, quality, and patient outcomes;
- understand and improve upon the components required of a drug information storage and retrieval system using electronic and/or manual processes for the multi-user environment of a drug information center;
- comprehend the role of the Pharmacia Medical Affairs Manager in the area of influencing medication policy and formulary decisions. Develop and implement medication-use policies and procedures to meet the needs of the institution or managed care health system;
- in enhancing the quality of pharmacy and therapeutics committee decisions on medication-use policy, be able to research and gather the documentation needed to create advanced formulary packets or formulary review documents for use by institutional P & T committees and in a managed care environment;
- employ advanced literature analysis skills in preparing drug information to accurately and effectively prepare expert responses to complex drug information requests;
- understand the current role drug information centers have with investigation drug policies and protocols and suggest any improvements;
- understand and be able to develop strategies for improving a health system’s adverse drug reaction monitoring and reporting program;
- increase knowledge of pharmacoeconomics and outcomes research and understanding of the methodology involved in conducting these studies and its applicability to patient-specific and population-based decisions in order to perform prospective and retrospective financial and clinical outcomes analyses;
- understand and familiarize with the process the department of pharmacy uses to meet accreditation and the legal requirements mandated for the provision of pharmaceutical care and drug information in an institutional and industry environment;
- conduct one experimental or descriptive research study of drug information practice by creating a useful and informative compilation of information in a particular therapeutic area that may potentially be suitable for publication;
- develop one major drug information project utilizing professional written/oral skills;
- understand the business and management aspects necessary to successfully operate a drug information center, and the recommended tools needed for continuous self-assessment;
- maximize efficiency in performing drug information tasks in attaining a level of expertise in the necessary computer databases, internet and electronic communications;
- publish newsletters, or articles in newsletters, providing pertinent medication-use information for health care professionals in the health system utilizing traditional or electronic routes;
- serve as a resource for the healthcare professionals and the lay consumers in matters related to pharmacy practice and drug therapy servicing the drug information hotlines and developing custom and standard written responses;
- appreciate and demonstrate ethical conduct in all activities related to drug information practice necessary to the specific environment and situation, integrating consideration of ethics into each drug information response.

**RESIDENCY BENEFITS**

The residency program benefits all involved. The resident has the opportunity to have exposure to diverse drug information settings, refine existing oral and written communication skills, expand existing knowledge of literature and drug information databases, comprehend and incorporate within one’s own daily practice the analytical thought processes necessary for effective decision making in a drug information environment. The resident will also be able to take drug information to the next advanced platform by incorporating the newest technology in the development and dissemination of comprehensive medical information customized to the needs of the healthcare professional for the ultimate provision of optimal patient care.

The benefits to Pharmacia and University of Illinois at Chicago for providing an education site and training PharmD residents are multifactorial. Pharmacia benefits by having assistance in the medical information development. Fact checking and the systematic search of the literature are time consuming and needed activities that can help streamline information development, aiding in the efficiency of a response. Additionally, this program allows the development of the preceptors in their feedback, mentoring and coaching skills and provides an adjunct faculty position at the university. Moreover, a relationship with the university is established and maintained, and can possibly lead to integration of future training endeavors. Finally, a most valuable benefit is the opportunity to screen prospective employees.

The University of Illinois benefits by offering a unique educational opportunity in their pharmacy curriculum. This relationship opens enhanced educational opportunities in other university residency and student programs.

**CONCLUSION**

This educational opportunity allows a drug information resident to learn about the opportunities for pharmacists within the pharmaceutical industry. Not only does a resident enhance their current knowledge base on the practice of drug information, the resident learns key skills in today’s working environment, flexibility and adaptability, by experiencing hands-on activities within the pharmaceutical industry. With the unique corporate environment, a resident is exposed to various drug information needs and requests, and must draw on previous skills to appropriately respond to the situation at hand. The establishment and implementation of an integrated clerkship rotation site benefits all involved—the resident, industry, and the university.

**References**


