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HOSPITAL PHARMACY EDUCATION PROGRAMS

by

Professor J.V. Swintosky*
WHO Consultant

* Dean, College of Pharmacy, University of Kentucky, USA

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At the present time pharmacists who enter into hospital pharmacy practice arrive there via various educational routes. Some take the usual undergraduate course leading to the B.S. degree utilizing elective courses to obtain some hospital pharmacy background, and then they seek hospital pharmacy employment where they learn through work experience. Following attainment of the B.S. degree in pharmacy some take a post graduate program of hospital pharmacy education. Still another educational route is to combine either of the above procedures with a residency in hospital pharmacy. Pharmacists who have completed two or three years of specialized education along with a residency experience are in much demand in the larger sophisticated hospitals (1).

Specialized programs of graduate education and training in hospital pharmacy have existed in the United States since the 1930's. The first such graduate program with a Master of Science degree was offered at the College of Pharmacy at Western Reserve University in Cleveland, Ohio. This College of Pharmacy no longer exists, but the masters degree for hospital pharmacy specialization is still offered by many of our colleges of pharmacy. Most of the U.S. programs had a technical and scientific emphasis. Within the past decade a clinical emphasis has evolved and several colleges now offer the professional doctor of pharmacy degree with some phase of hospital pharmacy as one of the major areas of specialization.

Specialized training programs have probably contributed as much to the development of hospital pharmacy in the United States as have the specialized educational programs. The first such program was offered at the University of Michigan Hospital under the direction of Harvey Whitney. These early programs were called internships but they were quite unlike the internship required for licensure. In order to indicate this difference, the term residency was applied beginning in the late 1940's. As with specialized training in medicine, the residency programs in hospital pharmacy have evolved through leadership of the practicing profession. As a result there are residencies in hospitals that have no academic affiliation; some are conducted jointly with a specialized educational program. The accreditation program for residencies is conducted by the American Society of Hospital Pharmacists.

Organizationally, the American Association of Colleges of Pharmacy and the American Society of Hospital Pharmacists have a joint committee which has studied and recommended educational plans over a number of years for hospital pharmacy practitioners.

In 1961 the joint committee recommended a statement of "Abilities Required of Hospital Pharmacists". In 1962 the same committee, using these abilities as a guide, recommended academic subjects which would develop competence in each of the required abilities. These statements were circulated widely to colleges of pharmacy and hospital pharmacy practitioners. The courses specifically recommended for hospital pharmacists were beyond those usually included in the five-year bachelor of science program in pharmacy. While the two organizations through their joint committee made no specific degree recommendations, it was suggested that either the Master of Science or professional Doctor of Pharmacy degree would be appropriate. According to the joint committee, the abilities required of hospital pharmacists include:

1. A thorough knowledge of drugs and their actions.
Knowledge in this area requires an understanding of the biological and physical sciences. A hospital serves as a laboratory for training various types of health care workers and a center for clinical research. The pharmacist's competence in this area is of ever increasing importance.
2. The ability to develop and conduct a pharmaceutical manufacturing program. In recent years hospital pharmacy manufacturing programs have significantly decreased in number as a result of improved industrial technology. Nevertheless, hospital pharmacists should have a thorough knowledge of good manufacturing practice in order to conduct programs in product development and to understand and apply the principles to the preparation of small volume parenteral products.
3. An intimate knowledge of control procedures.
This ability requires an understanding of quality control procedures as they apply to manufacturing programs so that the pharmacist can insure the identity, strength, quality and purity of hospital manufactured products as well as commercially prepared products.

Secondly, control is applied in a broader sense to the systems and procedures used in hospitals for accuracy in the flow of drugs and materials. Examples of such controls would include: inventory controls, legal controls and control of investigational drugs.

4. The ability to conduct and participate in research.
Students of hospital pharmacy should have experience in research, experimental design and the basic knowledge of statistics in order to participate as a team member in medical research or to conduct pharmaceutical research.
5. The ability to conduct teaching and in-service training programs.
Though specialized coursework in this area is not considered necessary, experience in practice does contribute to the pharmacist's ability to prepare and present lectures and demonstrations.
6. The ability to administer and manage a hospital pharmacy.
Knowledge of the principles of management, hospital organization and procedure are vital to the pharmacist who aspires to direct hospital pharmacy programs. Recently a trend toward specialization in such areas as drug information, pharmaceutical technology, drug distribution or research has attracted many pharmacists who do not seek careers as chief pharmacists or directors of hospital pharmacy departments.

Superimposed on all of these abilities is a new emphasis in pharmacy education stressing especially patient needs, social responsibility, expertise in drug information, communication skills with physicians and others, along with cooperation with other health team members. This undoubtedly will lead to further specialization. Clinical pharmacy, as it has been termed, will therefore require more of the pharmacist than a responsibility for compounding, dispensing and distributing drug products. It requires an understanding of their use in therapeutic situations and requires that the pharmacist assume positions which will enable him to influence their utilization. This new curriculum development has been brought about in part through the recognition of the pharmacist practitioner's considerable background and skill in appropriate drug product selection and utilization in therapy, and as a result of the increasing need for the pharmacist's participation in monitoring drug utilization, keeping family drug records, and

in contributing his expertise in the health care environment. Hospitals and community pharmacies have become teaching laboratories for this recent educational development, termed clinical pharmacy. Hospital practitioners constitute a segment of the teaching force since the colleges of pharmacy normally are located near or in the university medical center where a staff of pharmacists is available.

Though advanced education beyond the B.S. degree in pharmacy is considered desirable in hospital pharmacy, completion of a hospital pharmacy residency program is also considered desirable as effective preparation for practice. Today there are less than 50 residency programs accredited by the American Society of Hospital Pharmacists. These programs require a minimum of one year work consisting of 2000 hours in:

Department Administration
Outpatient Dispensing and Control
Inpatient Drug Distribution and
Control
Formulation, Preparation and Control
of both sterile and non-sterile products
Drug Information Services
Clinical Services in Patient Care Areas
Collateral and Interdepartmental Activities
Lectures, Conferences and Seminars

Some hospitals offer senior residency programs or require additional time to accommodate specialization in the several areas mentioned above.

References

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