Progress in Clinical Pharmacy
VI

Clinical Pharmacy Education and Patient Education

Edited by

JOAQUIN BONAL AND J. W. POSTON

PROGRESS IN CLINICAL PHARMACY: VI

Clinical Pharmacy Education and Patient Education

Proceedings of the 12th European Symposium on Clinical Pharmacy, Barcelona 1983

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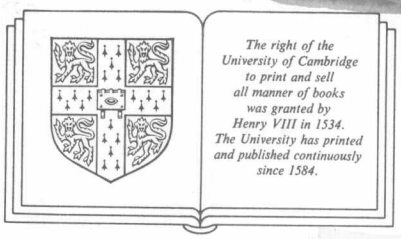

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PREFACE

The European Society of Clinical Pharmacy is convinced that Clinical Pharmacy is the base for rebuilding Pharmacy Practice. The 12th European Symposium on Clinical Pharmacy was held in Barcelona (Spain) in October 1983 and for the first time the meeting was held together with the XXVIII Congress of the Spanish Society of Hospital Pharmacists. This provided an excellent opportunity to exchange ideas and experiences between Spanish hospital pharmacists and colleagues from countries that participated in the meeting.

Pharmacists from Spain, Holland, Denmark, Sweden, France, Germany, Switzerland, Norway, Portugal, Italy, United Kingdom, Finland, Belgium, from Australia, U.S.A., Peru, Argentina and Nigeria, worked together for three days discussing different aspects of clinical pharmacy. A total of one hundred and thirty papers were accepted for this meeting either as platform or poster presentations. Seminars on clinical pharmacokinetics and a learning resource center were organized simultaneously. More than 600 pharmacists attended the meeting.

A large exhibition was held to show equipment, new drugs and techniques to be used in clinical pharmacy practice.

The main subjects of the meeting were "Pre and postgraduate education on clinical pharmacy" and "Patient education and compliance". Both subjects were discussed in plenary sessions starting with an invited speaker who gave an introductory lecture followed by a panel discussion. The invited plenary lecturers were W.E.Smith chief pharmacist of Memorial Hospital Medical Center from Long-Beach, California, and Jan-Olof Branstad from Apotëkesbolaget, Stockolm, Sweden.

It is very important to point out that a number of papers were presented in sessions on "Ambulatory Clinical Pharmacy", most of them submitted by community pharmacists. This represents a very impor-

step ahead in this field because we are convinced that clinical pharmacy will have a strong influence on health and on society if it is accepted and practised by pharmacists in the community, since it is in the community that most drugs are used.

Only some of the papers presented at the meeting are published in this book because of limited space. The papers are classified according to subjects, and we hope that readers will find many themes of interest and will obtain a representative view of the development of clinical pharmacy in European countries.

Progress on clinical pharmacy VI, contains many new advances in clinical pharmacy compared to previous editions. As the name suggests it provides an up-to-date collection of papers on the progress of clinical pharmacy.

We wish to express thanks to all the members of the Board of the European Society of Clinical Pharmacy to those of the Spanish Society of Hospital Pharmacy, members of the local organizing committee and scientific committee, to the authors of the papers, and to pharmaceutical companies, for their very valuable assistance in the organization of this meeting.

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TRAINING OF PRE/POSTGRADUATES IN CLINICAL PHARMACY IN THE U.S.

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The professional literature of the mid-1960's documented many patient drug-related problems in hospitals. The problems included medication errors (3,14), adverse drug reactions (4,12,16), prolonged hospitalization as a result of adverse drug reactions (4,12,16), drug-drug interactions (9), drug-laboratory test interactions (6), I.V. admixture incompatibilities (8), and drug-induced diseases (11). The providers of clinical pharmacy reasoned that, given an opportunity, pharmacists located in patient-care areas could reduce and prevent many of the drug-related problems. Fortunately, there were some physicians, nurses, and hospital administrators who were interested in improving drug-related services and expanding the role of pharmacists, and they allocated resources to pharmacists to let them demonstrate what they could do.

So, beginning in the mid-1960's, patient drug history interviews, pharmacist participation in patient-care rounds, adverse drug reaction reporting, patient drug-therapy monitoring, answering drug information requests, and patient discharge drug counseling interviews were implemented. Pharmacist clinical activities and, thus, clinical pharmacy in a modern context had started.

What has been accomplished? What can be stated with confidence in 1983? More pharmacists are providing clinical services than ever before in university hospitals and large and small community hospitals. Even so, clinical services are not provided to patients and physicians in even a majority, let along all, of U.S. hospitals.(20) More pharmacy students are provided clinical clerkship learning experiences than ever before. Postgraduate educational programs on clinical subjects are plentiful, and the number of postgraduate clinical residency programs increases each year. Pharmacist paticipation in clinical drug research is increasing. International interest in clinical pharmacy continues at

a high level. Clinical services, education, and research by pharmacists are at the highest level ever.

What are the principles, the results, the truths of the past 15 years that will be the basis for expansion in the 1980's? Each of these will be discussed in turn.

Pharmacists can provide effective clinical services if given the time, opportunity, and drug information support. Performance requires knowledge of drugs and their effects on people. It also requires the skill to apply knowledge and the ability to communicate and to work well with others. A desire to perform and a commitment to serve the drug-related needs of patients, physicians, and nurses whenever required are essential. Drug information support gives the clinical staff more time to provide services and also helps expand the scope of clinical practice.

Physicians will support and use the pharmacist's clinical services.(7,10,15,17) Drug knowledge and skill are the basis for a good working relationship with physicians. Knowledge must be specific and accurate; the information must be available and reliable. Physicians must believe that the pharmacist's knowledge and skill will assist them and benefit their patients. Pharmacists and physicians must respect each other's role and responsibilities.

Nurses will support and use the pharmacist's clinical services.(7,17) Knowledge and skill also are the basis for a good working relationship with nurses. They, too, must believe that the pharmacist's services will assist them and benefit their patients. As is the case with physicians, these professionals must respect each other's roles and responsibilities.

Clinical services provided by pharmacists are accepted as appropriate for reimbursement by private and government third-party payers, and various methods have been developed for the payment of clinical services.(2,18)

Patients do benefit from the pharmacist's clinical services. Reduction of drug toxicity, drug incompatibilities, inappropriate use, interactions, and adverse reactions occur daily in clinical programs.(7) Specific examples of pharmacist-regulated therapy that have been documented and evaluated include lower rate of bleeding complications with heparin therapy, lower incidence of nephrotoxicity from the use of aminoglycosides, reduction in serum drug concentrations of no useful clinical value, and reduction in I.V. aminophylline toxicity.

Well-planned and managed clinical pharmacy services are cost effective. Studies that have included the costs for both clinical pharmacy services and drug distribution have resulted in lower patient day costs.(17) Reduction in drug-related problems results in lower patient costs.

In summary, we have demonstrated that a clinical pharmacy program will improve the quality of patient care in hospitals by reducing patient drug-related problems. We have demonstrated that clinical pharmacy services can be provided on a cost-effective basis. We have demonstrated that physicians and nurses will support the clinical pharmacy program and use the pharmacist for drug information. We have learned that the implementation of a successful clinical program needs well-educated and committed pharmacists and competent managers. Together, staff and managers can successfully implement cost-effective services to the benefit of patients, physicians, nurses, and pharmacists. It has been a challenging and exciting period for the profession of pharmacy.

Drug knowledge and the skill to apply knowledge have been the essential components of the successful implementation and growth of clinical pharmacy. In my own situation, it was the desire to utilize the excellent pharmacy education received at the University of California that has continued to be a driving force in my practice and future career plans. The initial five pharmacists for the decentralized pharmacy project in 1966 at the University of California Hospitals joined the project because they wanted a practice which used their drug knowledge. The success of pharmacist clinical practice has led to many changes in the training of pre- and postgraduates in clinical pharmacy in the United States during the decade of the 1970's.

PHARMACY EDUCATION PROGRAMS

To discuss education and training programs, it is necessary to describe briefly the pharmacy education system in the United States.

There are 72 accredited schools of pharmacy. Completion of the educational program will give the graduate either a Bachelor of Science or a Doctor of Pharmacy degree. The schools of pharmacy are members of the American Association of Colleges of Pharmacy. The accreditation of the educational programs of the schools is the responsibility of the American Council on Pharmaceutical Education.

Accreditation may be defined as "the public recognition accorded to an institution or specialized program of study which meets certain established qualifications and educational standards through initial and periodic evaluations." The essential purpose of the accreditation process is to provide a professional judgment of the quality of the educational program offered and to encourage continued improvement thereof. The American Council on Pharmaceutical Education (ACPE) was established in 1932 and is the national accrediting agency in pharmacy. The Council is an autonomous agency whose membership is derived through the American Association of Colleges of Pharmacy (AACP), the American Pharmaceutical Association (APhA), the National Association of Boards of Pharmacy (NABP) (three appointments each), and the American Council on Education (one appointment). The latter appointee serves as a representative of the public in the sense of being a lay person who is not an educator in, nor a member of, the profession for which students are being prepared, nor in any way directly related to the programs being evaluated. In addition, a panel of public representatives serves in an advisory capacity to the Council.

CLINICAL COMPONENTS FOR THE BACCALAUREATE CURRICULUM

Accreditation standards for the baccalaureate curriculum require clinical sciences and practice as a core component. While the program may offer elective opportunities for acquisition of differentiated clinical knowledge and skills, the curriculum design is expected to provide clinically-applied courses, as well as clinical clerkships and externships for all students. Clinical clerkships include intern professional experiences and are primarily acquired in patient care areas. At the present time, the ACPE considers it reasonable to expect a quantitative experiential component of at least 400 clock hours consisting of a clinical clerkship and externship composite.(1)

CLINICAL COMPONENT OF THE PHARM.D. PROGRAM

The quantity and quality of the clinical experience of the Pharm.D. program are two of the benchmarks of this program. The training of the doctoral program should assure an experiential emphasis in patient care areas of hospitals and related clinical facilities. Experience in outpatient areas should include longitudinal experience, as well as studies toward improved ambulatory pharmacy practice. Clinical services

should be integrated with distribution of drugs so as to relate adequately to pharmacy practice. Clinical clerkship rotations should be selected upon predetermined practice foundations, and competencies should be established accordingly. In addition to a core of experiences, specialized experiences based on student interest should be developed in keeping with the standard "that there should be flexibility for students in choosing programs adapted to their career interests." The clinical component of the doctoral program should have as a minimal goal one academic year or 1500 clock hours. Qualitatively, the time should be of such character so as to be in accord providing a continuity of professional service and learning experiences. Sufficient experiential training with ample opportunity for professional decision making and the acquisition of clinical judgment skills should be provided so as to assure compliance with the standard that the "program will develop students professionally more mature than those in the baccalaureate programs." The professional motivation process is considered to be closely linked with the quality and quantity of clinical experiences.(1)

A doctor of pharmacy program should prepare pharmacists who can cope with the complex problems in the delivery of comprehensive health care; who possess both the knowledge and skill that enable them to function as specialists in the clinical use of drugs and who can apply pharmaceutical and biomedical sciences to the practical problems of drug therapy; who are motivated to participate in the interdisciplinary delivery of health care; and who can function as easily accessible health care informants and educators.(1)

TEACHING - CLINICAL CLERKSHIPS

The clinical clerkships are taught by "clinical faculty." They are active practitioners and possess an adequate understanding of the basic principles of their respective health sciences to fulfill capably the instructional tasks to which they have been assigned.

The Department of Pharmacy Services at Memorial Medical Center of Long Beach has clinical faculty. Doctor of Pharmacy students from the University of California, San Francisco, and the University of Southern California Schools of Pharmacy obtain 50% to 100% of their clinical clerkship education at Memorial Medical Center.

Memorial Medical Center of Long Beach is a 998-bed, nonprofit community teaching medical center. The medical staff consists of 1000