# Specialist Drug Knowledge in Patient Treatment

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## SUMMARY

**The creation of drug-therapy specialists is proposed, to be initiated in our larger hospitals. Such specialists would advise and participate in drug-therapeutics in conditions diagnosed by the physician. They would also relieve the physician, at his discretion, in the medication management of patients.**


*S. Afr. Med. J.*, **48**, 1920 (1974).

The practice of medicine has both benefited and suffered from the vast upsurge of drug discovery in the past 30 to 40 years. Thus, in accepting the benefits, there has come the realisation of greater hazards of those drugs when they are used in man. Such hazards have arisen from their high potency, specificity and reactivity, as well as their greater potential toxicity.

Awareness of this situation has led the Royal College of Physicians to investigate how best to provide clinical medicine with the drug information necessary to promote optimum therapy, and some 5 years ago a special committee report on *clinical pharmacology* was published by the College. It was recommended that study and research in drugs be pursued in man himself by interested and competent persons working in both clinical and laboratory practice.

A parallel development, stemming also from the increasing problems confronting drug-therapy, has been the concept of *clinical pharmacy*. A main component of this discipline aims at involvement in all aspects of drug-therapy, and is concerned with the patient as a sick person. This contrasts with clinical pharmacology, in which man functions chiefly as a test-subject for the elucidation of drug action.

The main purpose of this article is to substantiate a plea for the active presence, in the clinical sphere, of persons with specialist knowledge of drugs and their application in the treatment, prevention and diagnosis of disease. It is felt that this would be especially effective in hospitals in promoting rational therapeutics and patient-care. Further, more efficient use of our medico-pharmaceutical manpower would be made, the doctor-shortage problem ameliorated and the economy of the nation's health services benefited.

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Date received: 17 April 1974.

## THE CASE FOR DRUG-THERAPY SPECIALISATION

The lack of persons specialising in drug-therapy is noteworthy, since such persons may be considered to be equally as concerned with the patient as the physician and other clinicians. This lack is further emphasised by the number and nature of the drugs of today, already alluded to, and the problems associated with their use. There can be little doubt that an impressive depth and spread of knowledge about drugs is necessary to ensure their uniformly efficient and economical application in medical treatment.

### Current Drug Information

Keeping really up-to-date with knowledge of drugs necessary to therapy is a never-ending task, taking into consideration newly recognised features, such as drug bio-availability and interaction, and increasingly recognised ones such as genetic factors in drug response. Attempts are made to keep prescribers in the picture by the issue, at short intervals, of appropriate digests and catalogues. Pamphlets and samples from the drug industry shower down on the more-than-busy physicians, and research journals and publications add a continuous torrent of information on drugs and drug-therapy.

It is also clear that research findings of clinical pharmacology must enter into drug-therapy decisions, and that persons involved in such decisions must be continually aware of these findings. The nature and scope of clinical pharmacology have been the subject of much discussion, and formed a subject at the Third International Pharmacological Meeting of 1966 in São Paulo. This discipline may certainly be regarded as a specialised aspect of *experimental pharmacology*, in which information is sought about drugs pertinent to their effective use in man.

It does seem reasonable to suggest that the patient under drug therapy will benefit maximally if this remarkable volume of drug information is handled by a person such as the proposed specialist, who would exercise his professional judgement in assessing, and having or making available for immediate application, appropriate data from any source.

### Other Relevant Factors

The need for a drug-therapy specialist may also be discerned when one considers the prevailing amount of drug-induced illness and other unsatisfactory aspects of drug-therapy in hospitals and general practice.[1,2] This need is further emphasised by the incidence of adverse drug reactions, including drug-drug interactions, many of which

are preventable and, by clearing patients from hospitals more quickly, unnecessary costs are obviated.[2,3]

Under present conditions iatrogenic complaints do not appear to be decreasing. Also, failure to recognise adverse drug reactions may militate against an improvement or correct appraisement of a patient's state of health.

Another disturbing feature of patient-care is the prevalence of medication errors.[3,4] These arise from a variety of causes, and may nullify, to a greater or lesser degree, the therapeutic aims of the physician. However, the close control of the entire programme of drug treatment by a drug-therapy specialist would surely reduce or eliminate those errors.

## THE DRUG-THERAPY SPECIALIST VISUALISED

It would seem practical to launch this new speciality in our larger hospitals and in the Department of Health itself. In such an environment liaison with the physician and other members of the health team would be most fruitfully initiated. It would also be right and proper for these specialists to be prepared to give guidance to private medical practitioners in the use of drugs. The involvement of this specialist with both the physician and patient must be in a manner acceptable to all three people.

The following is a tentative outline of the main functions and responsibilities of this proposed specialist:

1. He would be available for consultation by clinicians on any aspect of drugs relating to their proper use in the treatment, as well as in the diagnosis and prevention of disease.

2. He would share responsibility with the physician, directly or indirectly, in the use of drugs and in drug-therapy planning, in conditions diagnosed by the physician. In other patient cases, at the discretion of the physician who has examined and diagnosed the condition, the patient is passed to his colleague for drug-therapy decision and implementation. The drug-therapy specialist would participate in the decisions relating to the choice of drugs and the form in which they should be prepared. He would also exercise oversight of and monitor the drug-therapy programme in the patient, relative to the total therapeutic treatment. He would authorise changes in the drug-regimen and emergency medication, if the situation should demand it.

3. He would participate in all hospital activities concerned with patient-care, such as ward and teaching rounds, medical staff meetings, seminars, etc.

4. He would provide, from time to time, lectures in the pharmacological and clinical applications of drugs in medical practice.

## RECRUITMENT FOR THE PROPOSED SPECIALITY

The training of persons aspiring to this speciality must encompass competence in the relevant basic sciences, a complete conversance with pharmacology and its medical applications, and an adequate clinical, pathological and pharmaceutical background.

It should be remembered that certain members of the health team, according to their training, could become one of these essentially new individuals, the drug-therapy specialists. Nevertheless, for practical reasons, this may not always be completely desirable. It seems unrealistic to consider the physician and nurse mainly because of the permanent shortage of such health officers and the highly responsible work they have to do. However, the introduction of the new speciality will greatly help them by relieving them from attempting other tasks for which they have not the time.

In the case of clinical pharmacologists, little further orientation would probably be required. But, as discussed earlier, they are mainly concerned, as medical research scientists, with finding out more about drugs relative to their effective use in man. Clinical pharmacologists are few in number, but their work is of the greatest importance, therefore it would be undesirable to deplete their ranks.

However, in considering the pharmacy graduate of today, it is noted that 4 years are spent in the study of drugs. He is well grounded in appropriate basic sciences, in pharmacology and its applications. He is also well trained in the chemistry and quality control of drugs and in all matters relating to the dosage-form, particularly its bio-efficacy, which is so essential in drug-therapy and which now introduces some degree of patient orientation.

It is questionable whether this knowledge is always deployed as beneficially as should be expected in retail or even hospital pharmacy. This follows from the fact that the traditional role of stocking, dispensing and supplying medicines and associated material (sometimes unassociated too), leaves little extra time. However, this knowledge serves as an excellent basis on which to build further training. It may sometimes be necessary to consolidate the pharmacy degree by further study in subjects such as biochemistry, physiology or pharmacology. When suitable clinical training is added to this there can be no doubt of the eligibility of such a comprehensive background for the role of drug-therapy specialist.

The concept of clinical pharmacy does, in fact, encompass the developments suggested. A generally accepted meaning of clinical pharmacy certainly includes a more direct personal relationship with the patient, particularly in the realm of drug-therapy. This has received considerable attention overseas, especially in the United States,[5-9] where, by 1971, at least 60 Colleges of Pharmacy have provided for some kind of clinical orientation in their curricula. Clinical pharmacy programmes up to doctoral level have already been set up in some American colleges of pharmacy.[10]

Pharmacy graduates of South Africa can, therefore, be provided with additional training, with most emphasis on a clinical background, to equip them for the role of drug-therapy specialist, and such training would include the study of disease aetiology, pathology, principles of diagnosis, pharmacotherapeutics, toxicology, etc.

Appropriate experience in clinical pharmacology would also be called for, as well as intensive hospital experience, as a resident, in the drug-therapy of disease.

## CONCLUSION

A world-wide problem in medical practice is the shortage of doctors, and this places an abnormal load on many practitioners in the examination, diagnosis and management of patients. Now superimposed on such difficulties is the need to provide optimal drug-therapy requiring specialist ability. Accordingly, the training and appointment of persons able to provide such expertise in drugs and drug-therapy seems a logical step.

Such trained personnel may be described as drug-therapy specialists or consultants. Initial potential for this speciality would be found in our larger hospitals, but in order to attract and retain persons of the required calibre, grading and salary would have to be adequate. There is no doubt that subspecialisation in particular aspects of drug-therapy would develop, and that the efficiency and economy of our health services would be promoted.

Considerable thought would have to be given to the number and assignment of such specialists. Above all, however, their participation must always maintain and enhance relationships between the patient and the health team, of which they would form a part.

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