The Relationship Between Hospital-Based Clinical Pharmacologists and the Pharmaceutical Industry

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This article questions the present and future place of clinical pharmacology in three different settings. These are the medical departments of pharmaceutical companies, academic university departments of clinical pharmacology and District General Hospitals.

I believe that the interface between the doctor employed within the pharmaceutical industry and the hospital-based clinical pharmacist is critical to the whole future of this important and rapidly developing specialty. I propose to dissect the problems of this potentially delicate relationship, illustrating them with examples from experience as a lecturer in an academic unit of clinical pharmacology in a London teaching hospital before entry into the pharmaceutical industry and, more recently, from the other side of the fence as the project leader of a team working on the development of the new Glaxo histamine H₂ antagonist Ranitidine (Domschke et al., 1979; Peden et al., 1979) where I was responsible for the UK and international drug development plan.

What is Clinical Pharmacology?

It is necessary to define exactly what is meant by 'clinical pharmacology' before any discussion of the interface and relationship between hospital and industry can begin. As medicine is disease rather than drug orientated it may be difficult for many practising clinicians to identify themselves with those physicians whose declared special interest is clinical pharmacology. As one professor recently stated, 'patients unfortunately do not suffer from a disease called clinical pharmacology'.

Further problems are caused by the multiplicity of definitions given by those who call themselves clinical pharmacologists. Some are experts in self-poisoning and toxicology, important components of clinical pharmacology. Others with chemical expertise in the field of drug analysis, who may not have a medical qualification and no clinical experience, may rightly claim to be clinical pharmacologists, because they work in departments bearing that name. Those with a previous degree in animal pharmacology who then enter clinical medicine could also state with conviction that their special interest is clinical pharmacology. These examples illustrate the wide difference in background, training, experience and potential expertise of those who all take the mantle of clinical pharmacology. This subject, unlike many disease orientated specialties, embraces the whole of medicine.

What is a Clinical Pharmacologist?

For practical purposes clinical pharmacologists can be conveniently subdivided into three groups. The more academically orientated understandably choose usually to work in university-based departments of pharmacology and/or clinical pharmacology. At present, few work in District General (non-teaching) Hospitals as consultant physicians with a special interest in clinical pharmacology. Because of the current financial problems of the NHS more of those who complete their training in an academic unit move into the third group, those who work as medical advisers or clinical pharmacologists within the pharmaceutical industry. These doctors have recently been renamed 'pharmaceutical physicians'.

The Clinical Pharmacologist Who is Based in a Teaching Hospital

Most doctors agree that the prime objective of the teaching hospital-based clinical pharmacist is to teach the principles of drug action and their practical application to undergraduate medical students. Clinical pharmacologists who work in academic units are also expected to develop the current research interests of their department and to initiate new projects. This type of physician is the ideal person for the industry-based doctor to approach to evaluate the phase 1 development of a new drug. Any publication about a drug that appears from an independent unit such as a teaching hospital academic unit of clinical pharmacology carries considerable weight, hence it can enhance the manufacturer's reputation and eventually increase sales. In some European countries it is essential to commission studies in academic units because the professors are often members of the local drug regulatory authority.

However, the industry-based doctor should realise that there may be serious disadvantages to commissioning a drug evaluation study in a teaching unit. Although there may be excellent facilities within an academic depart-
ment to investigate and analyse the results, there may be too few new untreated patients with the required condition to conduct a statistically sound clinical trial. Many patients who attend teaching hospital outpatients are suitable candidates for clinical trials. However, they may already be involved in other multidisciplinary studies that involve several different hospital departments. Thus, it may be necessary to approach several physicians to achieve the statistically required numbers to complete the trial. As multicentre trials are usually located in geographically separated units, many problems inherent in the organisation and execution of such studies may arise.

The District General Hospital Physician and Clinical Pharmacology

The motivation of the hospital-based consultant physician trained in clinical pharmacology who works in the busy world of a District General Hospital differs markedly from that of his colleague in the cloistered academic environment of a teaching hospital. Many clinicians do not view a district hospital clinical pharmacology physician in the same way as the definition given by the clinical section of the British Pharmacology Society (British Journal of Clinical Pharmacology, 1978). This probably reflects the fact that few physicians have received any specialist experience of the subject as part of their early general professional training in internal medicine. Examples of this attitude are shown by the following remarks made to me while working as a lecturer/senior registrar in clinical pharmacology: 'I view the district hospital physician with an interest in clinical pharmacology as someone who has spent about 18 months working in a teaching hospital department of clinical pharmacology.' This remark was made by a senior district hospital physician. Another comment made by an interview selection committee was: 'Isn't the pharmacist able to give the physician in a district hospital all the information he requires about drugs?' At the same interview another doctor asked: 'I may not know a great deal about drugs but I know enough to get by. In any case, I only prescribe those drugs that I know well. What we need here is someone who can interpret and treat the difficult arrhythmias or provide an endoscopy service, not someone who plays with new drugs.' A more positive attitude came from a surgeon at a postgraduate centre where I was invited to review the use of antibiotics in difficult surgical infections. He stated: 'If we had a clinical pharmacologist here we would always be asking his help about the management of difficult therapeutic problems.'

Another favourite question of consultant selection committees is to ask the candidate how they see clinical pharmacology fitting in with the service needs of their fellow consultant colleagues with other special interests. The average district hospital is more interested in acquiring someone with an expertise that will assist with the everyday work of in- and outpatient care. However, my recent experience after rejoining the NHS in two busy district hospitals is that, once the local physicians realise the value of the contribution of a clinical pharmacologist, they are soon converted.

The Medical Adviser or Pharmaceutical Physician in the Pharmaceutical Industry

Doctors usually enter the pharmaceutical industry from a variety of different backgrounds. Some medical advisers were GPs. Others are trained clinicians with a variety of interests in different subspecialties of medicine, who for a variety of professional or personal reasons (usually financial or disillusion with the NHS) decide to leave the hospital service. At present there are few trained clinical pharmacologists who work in medical departments of research-based companies.

Unfortunately, some doctors still regard a move from the NHS into the pharmaceutical industry as the outward sign of professional failure to succeed as a hospital specialist. This misconception was recently reinforced by the new IEC requirements for specialist registration. Doctors who work in the pharmaceutical industry who wish to obtain specialist recognition must now obtain the Dip. Pharm. Med. diploma. The prior possession of an MD or PhD degree or specialist diploma (e.g., MRCP, FRCS, or MRCPsych) does not exempt the candidate from any part of the examination for this specialist diploma in pharmaceutical medicine. The status of the doctor working in the industry is now belatedly changing from that of the alcoholic drop-out or ex-army doctor to a specialist physician with his own particular expertise in drug development. This is reflected in the recent change of name from medical adviser to pharmaceutical physician.

What qualities does the Industry Doctor Expect from the Hospital-based Clinical Pharmacologist?

Before selecting a clinician to evaluate a drug or perform a clinical trial it is necessary for the pharmaceutical physician to ask which of the following attributes is possessed by the chosen investigator. What is his motivation for doing the study? Is he honest? Is he objective? Is he reliable? What is his past publication record? Are there adequate laboratory and/or clinical facilities in the unit or do I need to provide some from my budget? Does the investigator have an established reputation in that field? Has he got security of tenure? (Very important with junior staff.) How many other commitments does he have and what priority will my study have? Does he have a thorough knowledge of medicine, pharmacology, the relevant chemistry, biochemistry, toxicology of the drug being studied? How much mathematical and/or statistical expertise is available locally?

It is extremely difficult to grade these qualities in any order, because all are vital. Sufficient motivation, drive and reliability are probably among the most important, at least from the pharmaceutical industry's standpoint. A consistent record of publications and the existence (or provision by the sponsor company) of adequate laboratory and/or clinical facilities within the chosen
unit to allow the study to be completed within the required time must be almost equally crucial. My short time in industry leads me to conclude that this experience is invaluable. Unless an investigator has experienced the different priorities and pressures of the pharmaceutical industry he cannot appreciate the subtle differences in emphasis between these deadlines and the requirements of the scientific community; for example, the pharmaceutical physician expects the study to be completed as quickly as possible. He also expects the trial to be properly performed, the results to be an honest appraisal and written up either for presentation at a meeting of the appropriate specialist society or for publication. This aspect of the relationship is one of the most important from the pharmaceutical industry's point of view.

Importance of the Basic Medical and Related Sciences

Few clinical pharmacologists possess the unusual combination of a thorough but broad knowledge of the whole of medicine and sufficient understanding of the related sciences of mathematics, statistics, chemistry, biochemistry, toxicology and pharmacology. A wide knowledge and/or experience of these interrelated subjects is often required to apply their principles to meet the requirements of the pharmaceutical sponsor. Many would understandably claim that it is both impossible and unnecessary for any one individual to be an expert in all these fields. While this may be true, the head of a clinical pharmacology department should not delegate the responsibility for data analysis to a pharmaceutical company statistician unless the trial co-ordinator is convinced that the statistician has a clear understanding of the purpose of the trial. The trial co-ordinator should also hold scientifically valid opinions about the most relevant statistical test to analyse the data generated by his trial. It may also be necessary for him to understand those aspects of cellular biochemistry or pharmacology that underly the mechanism of that drug's action. The clinical pharmacist does not require a detailed knowledge of chemical or biological drug analytical methods. However, he does need to know about the reliability, reproducibility and limitations of the assay methods used in his laboratory. Doctors who work within the pharmaceutical industry are well aware of all these problems. Few NHS clinicians see any connection between the design and analysis of drug evaluation studies or clinical trials and their everyday practical problem of patient care unless they happen to have an interest in clinical pharmacology or have participated in clinical trials.

Should the Industry Doctor Pick and Support an Investigator with an Established Reputation or an Unknown Researcher Trying to Establish Himself?

A doyen with an established position and a large department will always find it easier to obtain a prominent position and early publication of his work, often in one of the widely read medical weeklies. Although an established reputation is an obvious asset, it may be offset by other qualities that tend to be associated with success. There are risks in planning a routine new drug evaluation study with an established expert. A new 'me too' compound may be delegated to an inexperienced junior member of the large well-established department. Unless this investigator is well motivated, the trial may not be completed. Suitable incentives include the prospect of publication in the British Medical Journal and/or The Lancet and attendance to present a paper at an international meeting located in an overseas tourist centre. Finally, there is always the risk that the study is not completed because the research fellow/registrar leaves the department. Thus, the investment of large sums of money by drug companies in well-established university-based academic departments of clinical pharmacology is no guarantee of results or publication.

How Does the District General Hospital Consultant Rate as a Potential New Drug Investigator?

Before the present economic crisis, the Royal College of Physicians recognised clinical pharmacology as a separate new specialty. They proposed that general physicians with this specialist interest should eventually be appointed in every district hospital. To achieve this objective, additional new posts were to be created for specialist physicians trained in clinical pharmacology. It was also suggested that the vacancies arising from death, resignation or retirement should also be replaced with trained clinical pharmacologists, a directive that has not been acted upon.

The large modern district hospital usually has four or five full or maximum part-time physicians. The major special interest of most centres include cardiology, chest disorders, gastroenterology, diabetes with endocrinology and renal disease. Other related specialties represented by full-time consultant staff are neurology, infectious diseases, and rheumatology and rehabilitation. The recent trend towards early specialisation has led most young senior registrars to complete between two and four years of predominantly clinical work in one of these disease-orientated subjects before applying for consultant posts. Most successful candidates are usually appointed on the basis of their past experience in handling acute medical emergencies and running out-patient clinics. Additional requirements of the potential new specialist include a proven expertise with a particular practical technique (e.g. diagnostic endoscopy, cardiac catheterisation, endocardial pacing or haemodialysis). Inevitably, one of these specialist interests takes a higher claim than clinical pharmacology, and rightly so.

In contrast to the disease-orientated specialist physician, the special abilities and interests of the clinical pharmacologist often overlap with several different disciplines. Clinical pharmacologists may claim to know more about drug toxicity and/or interactions or self-poisoning than a general physician with a disease-orientated specialty. Most clinical pharmacologists usually have a detailed knowledge and understanding of pharmacokinetics and the methods of new drug evaluation. Another useful attribute (to the phar-
maceutical industry) is their ability to measure or arrange the assay of drug concentrations in the plasma and tissues. This wide variety of different areas of clinical and technical expertise cuts across the whole field of medicine and makes it very difficult for a conventionally trained consultant physician to place a clinical pharmacologist in the setting of a District General Hospital.

Drug Information Systems

The need for adequate readily available information about the complexities of drug action and interaction, the problems of adverse drug reactions and the rising cost of new drugs is readily recognised by all practising clinicians. However, the increasing deluge of literature and the regular appearance of new journals solely devoted to drug information has made it almost impossible for any doctor to know about every available drug. In most district hospitals the provision of drug information is now made by the pharmacist. While most pharmacists try to provide a comprehensive service, some form of 24-hour centralised drug information service and advice analagous to the regional poisons information centres is urgently needed. Prescribers usually require answers to potentially obscure or difficult drug problems within an hour or two. This field could be developed within each district hospital by close collaboration between the clinical pharmacologist and the area or hospital pharmacist. It is ironical that almost all pharmaceutical companies have an excellent drug information system and libraries that provide a regular literature review. Unfortunately, these reviews are usually limited to the company’s products.

Problems of the Interface between the Pharmaceutical Industry and the District Hospital Physician

There is obviously a wide gulf between the expectations of the pharmaceutical physician and the district hospital physician. The prime objective of the district hospital consultants is to appoint a colleague who shoulders his fair share of the heavy burden of in- and out-patient care. In contrast, the pharmaceutical industry would prefer access to more physicians whose primary interest is in new drug evaluation. This is because such people recognise the industry’s requirements to complete a clinical trial programme as well and as quickly as possible. The irony of this situation is that there is sufficient patient material within most District General Hospitals for the pharmaceutical industry to develop new drugs. A major advantage of the district hospital over university academic units of clinical pharmacology is that the community (staff and patients) are usually more stable than that in large cities.

Why Does Prejudice about Clinical Pharmacology and the Pharmaceutical Industry Exist?

There are several reasons for this. Among them are the limited scientific training received by many medical students during ‘2nd MB.’ Undergraduates are at an impressionable age when exposed to animal pharmacology. Few of their pre-clinical teachers possess a medical qualification. The blocking action of anticholinesterase on the frog sartorius muscle twitch seems to bear little relationship to the use of drugs in patients. Another problem is the condescending attitude of some clinicians to pharmacology. Students are trained to assess patients with a view to making a diagnosis and are rarely taught about treatment outside the lecture theatre. My recent experience at a district hospital of teaching medical students from several different medical schools (in London and the provinces) leads me to believe that the teaching of clinical pharmacology to undergraduates needs to be improved. Postgraduates who have learnt by their mistakes are far more keen to learn about drugs if some effort is made to make the subject interesting and relevant to what they are doing.

The Unfortunate Past Record of the Pharmaceutical Industry

Unfortunately, the thalidomide disaster has left a permanent scar on the corporate face of the pharmaceutical industry that will take many years to heal. Most older clinicians have seen the rapid demise of many new drugs that were originally hailed as therapeutic panaceas (e.g. practolol). Because it now takes several years for all the toxic effects of new drugs to be recognised, their full potential may not be appreciated. The FDA realised this long ago and has successfully reduced drug toxicology problems by waiting for the problems to appear in Europe.

Political Pressures and Public Opinion

Some politicians are all too ready to claim that subtle pressure is exerted by the multinational pharmaceutical companies’ many international outlets. The profits made from the sales of drugs developed by an efficient financially prosperous overseas-based multinational giant are seen as immoral, especially if the head office happens to be located in a country that has corrected our own politicians’ mismanagement of the UK economy. A recent example is the so-called excessive profits made from the sale of large quantities of the tranquillisers Librium and Valium. While Roche may have a case to answer, its critics conveniently chose to ignore the major contribution that company made to the treatment of Parkinsonism by developing Dopa.

The general public has a long memory for the few therapeutic disasters or adverse publicity of the pharmaceutical industry. Perhaps doctors working in the NHS should remember that the daily benefits their patients receive are due to the ingenuity of the pharmaceutical industry in developing potent new drugs.

The Hospital-based Clinical Pharmacologist and His Relationship with the Pharmaceutical Industry

I see little conflict between the profit motive of the pharmaceutical industry and the responsible prescribing
of drugs. Although an interest in drug evaluation may indirectly facilitate the ambitions of the drug industry, this spin-off of clinical pharmacology is more than offset by the many benefits that accrue from improved drug prescribing.

Financial Support for Research Provided by the Industry

The present economic climate may continue for several years. This means that the pharmaceutical industry is now a major source of research funds. Most heads of departments of academic units devote much of their time to funding their staff salaries and departments. I see little reason to reject drug company requests to further their own interests by sponsoring research by hospital-based clinical pharmacologists provided the investigator takes care to obtain support from several companies. Problems must occur when a clinical pharmacology unit is funded by one company. For example, the director of that department must find it difficult to be truly independent when he knows that salaries depend on the sponsor's continued support.

Those who provide funds rightly expect value for money. The prime objective of much pharmaceutical company sponsored research is to document both the human pharmacology and therapeutic efficacy of the drug in patients, preferably in a study comparing the new product with the standard drug. Much of my own research while working in an academic clinical pharmacology unit resulted from requests by pharmaceutical companies to evaluate their products along similar pharmacokinetic lines to those I had used previously for older drugs. I was able to remain independent by studying several different drug groups (e.g. antibiotics, levodopa, beta-blockers). This precaution avoids any pressure and the accusation of bias that could follow from a close association with one company. A symbiotic amicable liaison with several companies with similar therapeutic interests enables one to remain objective, pay salaries, and buy new equipment.

Drug Analysis

This is now an integral part of most pharmacokinetic studies. Most pharmaceutical firms now recognise the need to take considerable pains to ensure that the assay method for their drug is accurate. Because of the enormous outlay now required to purchase expensive and sophisticated equipment that is sometimes required for drug analysis (e.g. gas or high pressure liquid chromatography or mass spectrometry) many companies now offer a routine drug assay service to their investigators. However, there may be practical problems in this arrangement. Coded samples may deteriorate during transport from the investigator to the manufacturer. When I worked full-time in the pharmaceutical industry I discovered that it was safer to take personal responsibility for transporting frozen plasma samples to the UK from Europe. This avoids any potentially disastrous delay while valuable samples are held up in Customs.

If the task of drug analysis is delegated to a technician who has little idea of the design and purpose of the study, the results may be less meaningful than if he is made aware of the reason for what is done (e.g. measuring the concentration of a particular pharmacologically active metabolite). Many of the chemists who work in the pharmaceutical industry laboratories are more experienced than technicians who work in academic departments. It is the job of the pharmaceutical physician to motivate these ancillary staff by taking the trouble to explain what is going on in the investigator's centre.

My opinion of the quality of drug analytical work performed 'in house' was recently confirmed by the results of two different studies in which the results of microbiological assay of erythromycin and rifampicin plasma concentrations were compared in our own laboratories with those of the manufacturers in Switzerland and the UK. We found a close correlation with the values produced by the manufacturers (Paddock et al., 1976; Parsons et al., 1978). I have also found that some companies will allow a university-based technician to spend time working in their own analytical laboratories.

However, in some circles the publication of results of drug analyses performed in an academic unit may still be regarded as more scientifically credible than the occasional collaborative study between a manufacturer and the investigator, however careful the analyses. One advantage of doing the analyses 'on site' is that the local drug analyst can decide the priority of assay in relation to the demands of other centres. Having observed both sides of the fence, I would still prefer to assay plasma and tissue concentrations of drugs at the site of origin, if only to reduce errors from delay in analysis and loss of samples (or labels) during transport. Another problem that can be avoided by not parting with the samples is that disadvantageous results cannot then be concealed.

Publication

Pharmacokinetic studies in patients are essential if the manufacturers of new drugs are to obtain product licences for their compounds for registration. Phase 1 research in normal volunteers is unspectacular, costly, time-consuming and difficult to do well. Unfortunately, successful completion of pharmacokinetic studies is no guarantee to publication of the results in one of the more widely read medical journals, however orthodox the scientific design and the English, unless the study happens to have been done in a well-known unit. I have found that the editors of the weeklies often consider this type of article to be too specialised for the general reader.

In recent years some of the specialist journals (e.g. the British Journal of Clinical Pharmacology, Postgraduate Medical Journal, Excerpta Medica, Acta Therapeutica, The British Journal of Antimicrobial Chemotherapy) have produced some excellent (pharmaceutical company sponsored) supplements on drugs. Although this medium provides the authors of pharmacokinetic papers with a valuable outlet for their work, and the manufacturer with a ready (if sometimes costly) reference manual that
documents the proceedings of a ‘launch’ scientific conference, these publications are still not readily accessible to the prescribing general physician or surgeon unless he happens to know the drug company’s representative or has access to a good library. Most NHS doctors do not realise that the ABPI code of practice prohibits any pharmaceutical company representative from providing them with literature about their employer’s products unless they receive a specific request. As representatives are a very useful source of obscure reprints, this restriction seems rather unnecessary. I find that they are usually extremely well informed about their company’s (and sometimes their competitors’) products. Some of the larger pharmaceutical companies have their own publishing house, which is another useful source of drug-orientated literature, much of which is of a very high scientific quality and the standard source of reference (e.g. the Ciba symposia proceedings on beta-blockade).

How do Pharmaceutical Physicians View Clinical Pharmacology?

The Nature of the Work

It is amazing how little awareness exists among NHS doctors of the commercial realities of life and in particular how well they are protected by their monopoly state employer from the need to make a profit to survive. A pharmaceutical physician is forced to consider basic issues in much broader terms than he is probably ever likely to have experienced either as a research scientist or an NHS physician. My experience as a senior member of the research company of a UK pharmaceutical company was atypical of most industrial posts. I was put in charge of a highly competitive potentially lucrative area in which my employers had no previous experience and in which their competitors had five years of unrivalled lead. I was fortunate in that my job involved no contact with the commercial aspects of drug marketing (an unusual omission in the industry). This aspect of the medical work in a pharmaceutical company is important. However, many doctors find it distasteful, but this view is mistaken. Doctors are probably the best trained personnel to ensure that the good image of their employers is not tarnished by careless or thoughtless advertising. Unfortunately, standard undergraduate and postgraduate training does not prepare a doctor to do this type of work well. This omission is fortunately soon corrected by the Dip. Pharm. Med. course, which covers extremely well business, advertising, and sales techniques.

I was also fortunate not to be assigned to the development of a ‘me too’ analgesic, or to an antidepressant, or a sedative/tranquilliser. I found the planning of a new drug development programme an intellectually stimulating and demanding task. This work calls for a certain entrepreneurial skill. Those who prefer to work with superiors who give strict instructions may find such a role rather unsettling. I found it very satisfying to work in a small medical department where I was allowed to do my work without continual checks being made. Being the only clinician with a detailed knowledge of gastroenterology was stimulating. This was offset, however, by the knowledge that, although working on one’s own in a new field, the development programme depended upon my own abilities.

The Restrictive Effect of Legislation on New Drug Development

The UK Medicines Commission now takes about six months to consider applications for a clinical trial certificate. For this reason new drug development is initially conducted overseas long before trials in the UK are allowed to start. Doctors who work in the NHS may not appreciate that the CSM is responsible for a considerable delay in the introduction of useful new compounds.

Few pharmaceutical companies now consider the development of a new drug unless there is a reasonable likelihood of a reasonable economic return, as several million pounds’ outlay is required to satisfy the ever-increasing data demands of the CSM and FDA. This retrograde step has led to the increasing appearance of ‘me too’ compounds or analogues with marginal advantages over existing drugs. Dollery and Rawlins (1977) have made out a good case for spending the money now poured into animal research and development on the phased introduction of new drugs into patients, with careful post-marketing surveillance by all hospital doctors and GPs who prescribe the new drug. Although doctors are glad to use the potent new therapeutic tools provided by the industry, they are reluctant to accept the manufacturers’ need to make a profit to survive.

Financial Aspects of Life in the Pharmaceutical Industry

A contemporary accused me (unfairly) of choosing to move from academic work into the pharmaceutical industry for financial reasons. It came as a shock, however, to realise very suddenly how much inflation has eroded the living standards of most NHS doctors’ salaries. The rewards of industry plus the fringe benefits are commensurate with the earnings of other professions (e.g. lawyers) who have avoided the burden of a monopoly state employer. In my view the possession of a car is as essential to the practising doctor as is his stethoscope, regardless of his employer. I did not realise the value of an expense account until I had the opportunity to use one to entertain some of the world’s leading gastroenterologists. Why should doctors have to find the cost of these tools of their trade from their own pocket? Provided they are not misused, these benefits can be a valuable asset in doing a good job. The peace of mind induced by the knowledge that my car repair bills, medical defence, GMC and other professional subscriptions would be paid more than repaid the outlay of my employer. However, undoubtedly some industrial jobs are grossly overpaid (for a reason). A final postscript on salaries is that on the continent of Europe doctors are paid a considerably greater amount regardless of whether they work in academia, industry or a hospital/private practice. Those who travel less extensively than the
majority of industry doctors may not appreciate how far behind living standards in the UK have fallen compared with Europe.

The Dip. Pharm. Med.

Attitudes to this qualification among pharmaceutical physicians vary widely. Many regard it as irrelevant. Others obtain this 'ticket' in order to demonstrate that they possess the necessary internationally recognised specialist registration document to move around Europe. Possession of this qualification may, in the future, enhance a candidate's chances of obtaining a more senior position when he moves companies. In my view, the qualification may eventually be regarded in the same way as the ECFMG and FLEX examinations are now, as essential prerequisites to practise in the USA.

Until 1979, much of the course was run by a group of senior industrial doctors with long industrial experience. Coming into the industry from the NHS meant that there was much about drug legislation, the EEC drug registration requirements, clinical trial planning of drug supplies, material requisition and business practice of which I was unaware. I therefore found that much of the course was extremely useful and I regret that the demands of clinical practice prevent me from completing it at present. The lectures on drug legislation, the EEC drug regulatory authority requirements and the specialist medicine content are of a very high standard. Because the present members of AMAPI (the Association of Medical Advisers to the Pharmaceutical Industry) have other commitments, the course has had to be moved to the pharmacy department of Cardiff University, where it will remain permanently.

Postscript. Experience of Both Sides of the Interface

Having worked for a short time in the pharmaceutical industry, I have now returned to work as a consultant physician with an interest in clinical pharmacology in an NHS District General Hospital. Despite the clinical demands, I find that my industrial experience has been extremely valuable; it was one of the most demanding times of my professional life. The main difference between working in the industry and the NHS is that the demands are intellectual and physical (almost continuous travelling in Europe and South Africa). Provided a doctor selects the appropriate post with the right company, industrial work can be extremely stimulating and rewarding. It surprised me to discover that many contemporaries who had obtained the sort of post I now hold were dissatisfied with their lot and had already thought of a move into industry. The present economic climate in the UK may well transform doctors' attitudes to the pharmaceutical industry, so that those who are eligible for the more senior academic and consultant appointments may opt to enter the pharmaceutical industry. In a few years, the surplus of well-trained experienced doctors may result in a glut of highly qualified widely experienced clinicians chasing a limited number of jobs with good companies.

However, my industrial experience has not altered my opinion about the place of clinical pharmacology, which is crucial to the development of new drugs. Although most clinical pharmacologists consider their role to be in drug use, I believe their real place is in the planned clinical development of new drugs. I hope that more enlightened attitudes may soon prevail and result in the appointment of more district hospital clinical pharmacologists, some of whom may have industrial expertise. The ideal post is one that combines the resources of the pharmaceutical industry with the large numbers of patients suitable for clinical trials that pass through District General Hospitals. If the result of this interface is that existing drugs and new compounds are used more rationally, then clinical pharmacology and the pharmaceutical industry will have made a major contribution to the improvement of patient care in the NHS.

This article is based on a paper read at the Royal College of Physicians in May 1977 at a meeting organised by the Association of Medical Advisers to the Pharmaceutical Industry.

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