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## *Clinical Pharmacy in UK Hospitals*

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### *Introduction:*

Hospital pharmacy services are provided by approximately 5,000 hospital pharmacists in the United Kingdom. They provide pharmacy services to over 200 groups of hospitals, each group consisting of between one and ten hospitals servicing 250,000 acute beds. The ratio of pharmacists to acute beds varies from 1:30 to 1:150 pharmacists are supported by pharmacy technicians, who undergo a two year training programme, and pharmacy assistants who are trained in the workplace. All pharmacists have a first degree, a three year undergraduate course of study, and are registered with the pharmaceutical Society of Great Britain following a one year post graduate training programme.

The practice of pharmacy in most hospitals combines the procurement and distribution of medicines with the systems to ensure the safe, effective and economical use of medicines. These Systems have evolved from the prescription monitoring service provided by pharmacists to wards in the early seventies<sup>(1)</sup>. Involvement in ward activities led to some pharmacists becoming

part of the ward based clinical team as they developed the role of advisor to the team on drug related aspects of care<sup>(2)</sup>. Simultaneously pharmacy departments were involved in the development of policies for the selection and use of medicines<sup>(3)</sup>. This approach, which involved discussion between doctors and pharmacists about effectiveness of medicines and value for money from medicines, led to the introduction of formularies. These activities led to the concept of the "ward pharmacist", who visits the ward regularly to monitor prescriptions, ensure adherence to hospital policies associated with the use of medicines and educate junior doctors about selection and use of medicines. Ward pharmacists gradually became involved with the care of individual patients and developed a clinical orientation to their practice leading to the concept of clinical pharmacy.

Clinical pharmacy is characterised in the UK by the pharmacist being involved with the care of individual patients and contributing to the team approach to patient care. This contribution will vary depending on the clinical problems of the patient and the scope for the practice of clinical pharmacy within the hospital.

### ***Current Clinical Pharmacy Practice:***

Clinical pharmacy practice in UK hospitals cannot be described by a single model of practice, the history of its development has resulted in many different types of clinical service. This was shown by the results of a survey of clinical pharmacy services in 416 UK hospitals<sup>(4)</sup>. The survey found that 96% of hospitals surveyed provided an inpatient prescription monitoring service, 92% provided clinical trials support, 89% were involved in formulary management, 60% had an onsite drug information service, 21% provided a therapeutic drug monitoring

service and 16% a medication history taking service. Although there were some common features of the clinical services no two services were identical.

An added dimension to this diversity of service provision is the variation in input and style of individual clinical pharmacists. Practitioners develop their own approach based on their strengths, the training they have received and the role models they observed during their training. Recognition of this diversity led to leaders of the profession developing and publishing "Standards for Clinical Pharmacy"<sup>(5)</sup> as a way of bringing greater uniformity to practice. These were adopted by the Pharmaceutical Society as models for good clinical practice. The standards have been adopted by many hospitals, unfortunately it has proved difficult to implement them in practice. The practice of clinical pharmacy does not lend itself to a procedure and protocol driven approach that is used in pharmaceutical manufacturing. They have raised the base level of practice but have not attained the status of "mandatory guidelines for practice". This is essential if they are to achieve formal recognition by hospital management as a statement of the standards of care all patients should receive. The profession has as yet been unable to use them to bring greater uniformity to the practice of clinical pharmacy in the UK.

A contributing factor to the diversity of practice has been the lack of clarity amongst pharmacists of the objectives of clinical pharmacy. Clarity of purpose can only be achieved if we have a shared vision and a set of agreed values for practice<sup>(6)</sup>. A statement of underlying principles for pharmaceutical care was published by the pharmaceutical Society after lengthy discussions with many practising pharmacists<sup>(7)</sup>. These principles included:

"the pharmacist has a duty of care to the patient to ensure that

the medicines they receive are safe, effective, and represent an effective use of scarce NHS resources"

"the pharmaceutical care provided should be commensurate with and responsive to the needs of the patient"

"pharmacists are professionally, ethically and legally responsible to the patient for the quality of care they provide"

These principles form a set of underpinning beliefs on which clinical pharmacists can build their practice. It is unreasonable to expect uniformity of practice in all hospitals since the opportunities for development and the strengths of the personnel will vary. However development of services based on shared values does mean that the benefits to patients of clinical pharmacy can be achieved by different approaches to practice. In addition sharing our values with our clinical colleagues will assist them in understanding of what clinical pharmacists are trying to achieve.

The evolution of clinical pharmacy in the UK has been hampered by the scarcity of studies demonstrating the benefits of clinical pharmacy to patient care and any impact on the cost effective use of medicines. There are few studies which can be used to justify investment in clinical services, despite this the contribution clinical pharmacy can make was recognised by the government. Advice was issued to all hospitals highlighting the benefits of a clinical pharmacy service and advocating the implementation of formulary policies in each hospital as a way of controlling expenditure on medicines.<sup>(8)</sup> Publication of this support for clinical pharmacy gave the stimulus to the implementation and expansion of these services over the last ten years.

### *Pharmacy Practice at Leeds General Infirmary:*

Leeds General Infirmary (LGI) has an extensive clinical pharmacy service that is typical of many large teaching hospitals in the UK. We have teams of clinical pharmacists associated with each major clinical group, e.g. cardiology/cardiothoracic surgery, general medicine, pediatrics and oncology. A pharmacist will participate in the daily clinical rounds to advise on drug selection and dose and to monitor adverse effects of medication. The pharmacist will resolve drug-related problems for individual patients, discuss medication issues with patients and arrange for the continuation of medication supplies after discharge. In addition the pharmacist will discuss drug selection policies with the team, document agreed guidelines and educate new doctors about the rationale for these guidelines. This educational role extends to nurses and other staff working on the ward.

This is the core clinical pharmacy service, which is usually carried out in the morning, many pharmacists are involved in providing specific individual patient services during the rest of their day. These include pre-admission clinics, where the pharmacist ensures patients bring in their own medicines for short-stay use; individual patient anticoagulation after cardiac surgery; prescribing of parenteral nutrition for babies and adults and training elderly patients to take their medicines appropriately after discharge. This is not a complete list, but gives an indication of the way our clinical services is developing, moving from a systems and product-orientated service to a patient orientated service. Pharmacy services in other hospitals are developing along similar lines. There are pharmacist-led discharge services at Bradford<sup>(9)</sup>, pharmacist involvement in acute pain management<sup>(10)</sup> and providing chronic pain management services to

outpatients<sup>(11)</sup>. Recent developments have seen pharmacists leading clinics monitoring the use of disease modifying agents in rheumatology and the use of clozapine in psychiatry.<sup>(12)</sup>

The development of these services is a sure sign of the present strength of clinical pharmacy in the UK. The pharmacist can combine concern for the patient, by ensuring they receive the best pharmaceutical care for them as an individual; with ensuring that the organisation obtains good value for money for its expenditure on medicines.

### *Key Issues for Clinical Pharmacy in the UK:*

The expansion of services to individual patient has led to tension in many departments between the needs of the central pharmacy service and the demands, generated by a patient orientated approach to service, for pharmacists to work on the ward or in the clinic. Some hospitals have developed decentralised clinical services in which a pharmacist is based on the ward as opposed to being based in the pharmacy and visiting the ward<sup>(13)</sup>. However, it is recognised that the service must have a common approach which requires that individual practitioners work as part of a coordinated team led by the pharmacy service.

It is recognised that we do have many different approaches to the practices of clinical pharmacy and that we do not document our activities in any detail. This is confusing for clinical colleagues as they move hospitals, and for new pharmacists. Previous attempts to introduce standards of practice in the past have not been adopted widely in the UK. In recognition of this, the Scottish Office has taken the initiative in this area and published what could become a national approach to clinical pharmacy practice. The recommendations, set out in "Framework for Practice"<sup>(14)</sup>,

describe an approach to the practice of clinical pharmacy and deal with both interactions with patients and the necessary organisational infrastructure required for clinical pharmacy practice. They include a requirement for documenting both the involvement of pharmacists in patient care and the outcome of this involvement. Adoption of these guidelines could raise the standards of clinical pharmacy practice throughout the UK and would also generate information on the effect of pharmaceutical care on patient outcomes. Information about the impact of pharmacy on patient care could sustain the development and expansion of clinical pharmacy. At present there is concern about the lack of evidence for the input of clinical pharmacy on the outcome of care from individual patients. The economic impact of clinical pharmacy is generally accepted<sup>(15)</sup>. However, few studies have documented the effect of clinical pharmacy, the morbidity and mortality outcomes of patient care<sup>(16)</sup>. Investigation of the impact of pharmaceutical care on such outcomes will form the basis of the research agenda for clinical pharmacy in the UK for the coming years.

To date, our research programmes have been fragmented. There has been little collaboration between practice and academic research centres. Improvement in this area will lead to focused research programmes documenting the impact of clinical pharmacy practice on patient care.

A major influence on the development of clinical pharmacy has been the expansion of post graduate training in clinical pharmacy. These training programmes have evolved from university based programmes led by clinicians to the practice based programmes of today. These are taught by skilled clinical pharmacy practitioners who are hospital based. There are now several hundred pharmacists with a post graduate qualification in clinical pharmacy. These practitioners are committed to devel-

oping a patient orientated approach to pharmacy practice and have the skills and knowledge to make a major contribution to patient care through their participation in the clinical team. Unfortunately these skills are valued in many other areas of pharmacy practice and many pharmacists prefer to work in community or primary care pharmacy practice. The hospital service is now having difficulty meeting the expanding demand for clinical pharmacy services because of the lack of enough suitable pharmacists. Resolution of the manpower problem is a key requirement for the continued development of clinical pharmacy in the UK. If this issue can be resolved, then clinical pharmacy practice will continue to expand in the UK.

***Conclusion:***

The concept of pharmaceutical care for patients is now understood by our clinical colleagues in many hospitals and they support its application to patient care. Consolidation of our contribution to patient care will give us a firm foundation on which to build a research and development programme that will ensure we use our resources effectively in improving patients.



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