King's Fund Hospital Centre

CONFERENCE REPORT

DRUGS IN HOSPITALS

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C O N F E R E N C E R E P O R T

DRUGS IN HOSPITALS

The conference, which was held on Tuesday, 28 February, 1967, was attended by approximately 100 people, the majority of whom were doctors, nurses and pharmacists

King's Fund Hospital Centre
24 Nutford Place
London W1

Price: Five Shillings

DRUGS IN HOSPITALS

Chairman: Professor A. Wilson
Department of Pharmacology
University of Liverpool

Speakers: Dr. D.W. Vere
Consultant Physician
The London Hospital

Miss H.M. King
Clinical Tutor
Royal Southern Hospital
Liverpool

Mr. G. Raine
Chief Pharmacist
St. George's Hospital
London

Dr. R.D. Weir
Senior Lecturer in Social Medicine
University of Aberdeen

Mr. J.A. Baker
Group Pharmacist
Westminster Hospital

Mr. D.W. Carrington
Chief Pharmacist
Royal Cornwall Hospital (Treliske)
Truro

Mr. A.J. Ross
Chief Pharmacist
Macclesfield and District HMC

DRUGS IN HOSPITALS

1 PROBLEMS OF IN-PATIENT MEDICATION

1.1 Dr. Vere, giving the doctor's view, was concerned with problems arising from prescribing systems in hospitals. He thought that the main problems arose for the following reasons.

(a) Prescribing systems were complex because many people and several professions had to participate often from departments geographically distant from each other. This meant inefficiencies at certain points particularly as the ultimate responsibility lay with the non-playing captains of the teams, for example, the consultant, the matron, and the administrator. Frequently the patient had to be the referee: "Where is my yellow pill?" or "Should I really be taking this pethidine?" He felt that hospital administration should be in closer contact with the patient.

(b) Prescribing charts were arranged badly and completed badly. Sometimes prescriptions were totally illegible with mixed and inaccurate abbreviations. Too many drugs were prescribed for a patient - 'polypharmacy' - where one or two would have sufficed. This opened a vast field for error and it created confusion especially for the patient being discharged home. Dr. Vere quoted an example of a patient who returned to hospital with a hold-all crammed with drugs none of which had been taken.

(c) The enormous numbers of drugs now available

overloaded existing systems which had not been geared to meet this quantity. Trade names were convenient but dangerous; official names, however, were confusing. It had definitely been found that the greater the number of prescriptions, the greater was the percentage of error. Dr. Vere thought that limited prescribing, clear cancellations, due care with the introduction of new drugs, and the abolition of Latin terms would help.

(d) As the problems had increased, systems were modified but in the wrong way. Alterations were made piecemeal or by accretion instead of the whole system being reviewed and streamlined.

In summing up Dr. Vere said it was essential to remedy the problems: by a multi-disciplinary approach involving all the relevant professions; by a scientific approach using work study so that analysis could be made of present practice rather than retrospective examination; by evaluation of new systems. At The London Hospital, by means of critical examination and experiment, they were well on the way to solutions of such problems as the wrong dose, dose given at wrong time, or dose omitted. One result was a newly designed prescription chart.

1.2 Miss King, who had formed her conclusions from information and observation from many hospitals, from all types of nurses with different background and educations, spoke of the nurse's multifarious duties, often complicated by ward muddle which caused distraction and stress when she was required to perform exacting tasks such as the giving of medicines.

Miss King went on to say that in considering the problems of drug management the viewpoint of all nurses, student and registered nurse, also nursing instructor and

administrator, must be encompassed. Sound teaching methods should be directed to this formidable problem where speed, accuracy and security were essential. It would be worth a painstaking study to eliminate time-wasting, error-inducing factors from the giving of medicines in wards.

She analysed the process which ended with the administration of a drug by a nurse to a patient: communication of instruction - the prescription sheet should be legible, without ambiguity and should be intelligible to the recipient having regard to education and experience; tools for the job - the drugs ordered must be available in sufficient quantity and in a form ready for use. She spoke with concern about the differing sizes and shapes of containers and made an earnest plea for standardization. Labels should be legible without the necessity of close inspection and handling. In practice the nurse had to cope with anything up to 60 different medicines during a round. Resulting confusion increased the work load and the psychological stress which arose from difficult patients, interruptions, noise and limited space. It was not always appreciated that medicine rounds could take up to one hour to complete. This was hardly surprising when one considered each and every move made by a nurse during a medicine round*.

1.3 Mr. Raine said that the pharmacist acted as an intermediary between the doctor who prescribed and the nurse who administered medications to the patient. Although he would be speaking about problems which faced the pharmacist on account of the failings of his medical and nursing colleagues, he hoped that no holier-than-thou attitude would be detected in his remarks. As a result of the 'therapeutic explosion' it was

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* The Ward Medicine Round. Observed procedure as listed in Studies in the Function and Design of Non-surgical Hospital Equipment. Extract from working documents, para. 10.8, Royal College of Art, London, SW7, 1962.

necessary for the pharmacist to be a highly trained individual with a knowledge of pharmacology and to some extent of therapeutics so that he could act as adviser to medical and nursing staff on these matters. Because drugs were his primary concern, the pharmacist tended to be more alive than doctors and nurses to the difficulties and dangers attending their prescribing and administration. Time was when there were but few synthetic drugs available. Now ninety-nine out of a hundred contained synthetic substances. Most of them had powerful pharmacological actions and hence might be of considerable benefit, or harm, but all might cause unpleasant side effects. All this was a long way removed from the conditions for which our customs of prescribing and administering drugs were designed. It was imperative, said Mr. Raine, that a proper system should exist whereby every patient should get the right drug in the right dosage by the right route and at the right time.

He thought that difficulties attributable to the prescriber arose from illegible handwriting - there were a large number of drugs with similar names which could be confused, for example, chlorpromazine and chlorpropamide, dibistin and dibotin; from incomplete prescriptions - omission of the dose or the frequency of administration or the period for which treatment was to be given. The route of administration should be clear. This information was vital for those drugs which would be valueless in certain conditions if given by the inappropriate route. The pharmacist had a duty to draw the attention of the prescriber to incorrect dosage, and if unable to contact him, to alter the directions so that no more than the maximum official dose was given to a patient. It was important that the pharmacist should know all the current drugs a patient was receiving so that he could point out any pharmacological incompatibility. Drug sensitivity

was another problem. A doctor might prescribe a compound which, unknown to him, contained a substance to which the patient was sensitive. The pharmacist, therefore, needed to know the drug sensitivities of any patient.

Difficulties in relation to nursing staff were somewhat different in character. Supplies of medicines to wards were divided into two categories: ward stocks obtainable on simple requisition forms; individual drugs supplied only when a prescription was sent to the pharmacy. Nurses tended to be like squirrels and would evade rules about what was stock and what was not stock, keeping every drug they could lay their hands on "in case it is wanted". This was a dangerous habit. Apart from the confusion which could occur with drugs of similar names, and the danger of administering the wrong dose, drugs could deteriorate and become toxic or ineffective. In her anxiety not to be left without a drug, the nurse sometimes transferred drugs from their proper containers to any handy vessels. The medicine list had been condemned but in how many hospitals had it been replaced by a rigorous system of checking and recording of medicines to patients? Nurses complained that they were not always able to carry out the correct routine because the prescription chart was away in the pharmacy. Mr. Raine suspected that there were other reasons particularly pressure on nurses who felt that there was not time to carry out the full routine.

Mr. Raine endorsed the views of previous speakers regarding ambiguous abbreviations and the failure to cancel a prescription properly which resulted in medication being continued for too long. He spoke too of the dangers of two or more prescription charts being used concurrently leading to over-medication or the building up of reserve stocks in wards.

2 DISCUSSION

2.1 The London Hospital Experiment Dr. Vere was asked whether the experiment had been confined to a change in documentation, also whether there had been a reduction in errors made as a result of the experiment. He replied that the whole system had been modified from the roots up. The number of medicine rounds had been reduced and the times of rounds had been rationalised. A new, lockable medicine trolley was in use. Follow-up investigations had shown a sustained improvement so that reduction in errors made was not simply the result of nurses being more alert at the beginning of an experiment. Now it was hoped to extend the experiments further in the hospital to gain an optimum solution to the problems.

2.2 Nurses in Training Miss King was asked whether there were any statistics regarding nurses in training who had studied chemistry for their GCE. On learning that were were no such statistics the questioner, a pharmacist, wondered how he and his professional colleagues could lecture effectively to student nurses who had no basic knowledge of chemistry.

2.3 Standardization of Drug Containers A pharmacist emphatically endorsed Miss King's plea for standardization. He thought part of the trouble was the tendency on the part of pharmacists, especially the women, to hoard any container regardless of shape or size. He would love to see all the old ones scrapped and new standard ones introduced. The cost was but a flea-bite in comparison with the cost of drugs.

2.4 Training of Housemen In asking what was being done at The London Hospital to train young housemen in prescribing, the questioner referred to the consultants'

responsibility in this respect. Dr. Vere said that he was trying to get a series of lectures going on prescribing. However, there were difficulties. "How do you get them together? They are always going round with their Chiefs." He did lecture to final year medical students but thought that this was not particularly meaningful as they were not yet themselves prescribing. He felt that there should be a closer link with the administrators so that study days could be arranged; even the question of accommodation was a problem.

2.5 Multiplicity of Prescription Charts A houseman at the conference spoke of the problem of the missing chart at night which inevitably meant making out another. A pharmacist thought that this problem of charts being away in the pharmacy was an administrative one depending to a large extent on there being an effective messenger service but "messengers are more difficult to get than pharmacists!"

2.6 Ambiguous Terms A nurse wanted to know what t.d.s. really meant or q.d.s. or nocte. Dr. Vere agreed that these terms meant different things to different people. The new prescription chart at the London included actual times for drug administration.

3 STEPS TOWARDS A SOLUTION

3.1 Dr. Weir referred in his opening remarks to the published account* of the new system of prescribing and administration of drugs that had been evolved at Aberdeen. Research on the subject, which had started with the discovery of an error, revealed remarkable prescribing variations within the same hospital. With the old system a doctor wrote the prescription, a nurse interpreted it, and often another nurse transcribed it, which certainly afforded opportunity for error. Analysis of 400 prescriptions with their corresponding medicine lists had shown discrepancies of over 20%. The two main reasons for this were the benefits of modern therapeutics which added to prescribing problems and the complexity of documents in recording treatment. One solution was the introduction of a single document to replace those used previously, prescription chart and medicine list. An essential feature of its design was the division for nursing operations needed, for example, injection or other route, once only or regular. This one document** eliminated the need for transcribing also timing abbreviations. In introducing the standard form it had been recommended that all prescriptions should be printed, they should be signed, only approved names should be used, and doses should be given in the metric system. Each prescribed drug was to be entered against a code letter. Dr. Weir said that it was not enough to make recommendations; it was necessary to see if they were practical in continuous use. Complete evaluation must be carried out and improvement undertaken where needed. He spoke of the evaluation done at Aberdeen during the first 18 months of the new system.

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* British Hospital Journal, December 30, 1966, p.2477.

** Prescription Sheet used at Aberdeen General Hospitals, see The Lancet, March 25, 1967, p.668.

The next logical step after developing a satisfactory prescribing system was to develop a simple, accurate and time-saving recording system for drug administration so eliminating errors at that stage. A recording sheet* was introduced giving dates and times, including columns for times of specific medicine rounds as well as one for other times. After giving a drug, the nurse recorded it in the appropriate column by its code letter, this code letter being taken from the prescription sheet, and then initialled it. Analysis of prescription sheets in comparison with the recording sheets had shown that patients had received over 95% of doses ordered.

Dr. Weir thought that the supply of drugs in hospital presented a serious problem. There were three basic methods: ward stocks with bulk requisitions; individual dispensing from the main pharmacy; a compromise between the two methods. In Scotland the first method was commonly used but not with impunity. It meant the nurse had to assume a responsibility for which she was not trained and the pharmacist was not used to the best advantage. One answer was to place the pharmacist in the ward. This meant that the prescription sheets never left the ward; the pharmacist, not the nurse, replenished stocks and did so to meet current treatments for the 24 hours; the pharmacist was available to give professional advice.

3.2 Mr. Baker spoke to his paper, A New System of Drug Distribution at Westminster Hospital, which was circulated together with various supporting documents** including the prescription sheet currently in use at the hospital. The new system had resulted from a study undertaken to define the problems related to drug administration and to introduce changes to overcome them.

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* Drug Recording Sheet used at Aberdeen General Hospitals, see The Lancet, March 25, 1967, p.669.

** Available from J.A. Baker, Esq., B.Pharm., M.P.S., Group Pharmacist, Westminster Hospital, London, S.W.1.

The main problem found was the common failing of most concerned with drugs to appreciate fully not only their own difficulties but those of other staff involved. He endorsed previous speakers' remarks on the many complexities involved with drug administration but in referring to the nurses' problems he said it should be remembered that hoarding could be the result of poor service from the pharmacy.

The need to improve the drug distribution system had been essential. Preparations commonly used on all wards were now prepacked in the pharmacy in standard units, labelled with approved names and metric doses. Wards were allocated a standard range of these stock drugs. In addition, each ward was allocated a supplementary stock of commonly used drugs, similarly packed and labelled, relevant to its needs. To ensure that a properly labelled container for a stock drug was always available on the ward, at least two units of each preparation were provided. Requisition forms listing these items alphabetically had been printed. Bulky items such as disinfectants and intravenous fluids had been omitted from the list as they were delivered to wards on a topping-up system. Printed lists of all stock drugs agreed for the ward, which formed over 90% of requirements, had been provided in each drug cupboard and inside each requisition book. Nursing staff requisitioned merely by indicating in the appropriate space on the form the number of empty units returned also the additional stock items required. These were checked with the printed list inside the cover of the book before issue to ensure effective control over drugs available on each ward. Stock issues could be effected rapidly by technicians without direct pharmaceutical supervision as everything was prepacked and stored in requisition order. A pharmacist visited each ward twice daily to ensure supply of non-stock items. Prescription sheets remained in the wards at all times.

Problems leading to errors in drug administration had largely been overcome by the introduction of a new prescription sheet - a similar but modified version of that used by Aberdeen - also by standardization of nursing procedures and drug administration times. Housemen were helped and encouraged to prescribe more carefully by the regular visits of pharmacists to the wards. A single pharmacist had direct responsibility for a block of six or seven wards. His total daily commitment for 150 beds was approximately one hour. The pharmacist now had a better understanding of nursing and medical staff problems based on improved communication. This was further improved by the issue of bulletins on drug information. The changes had been completed during 1966 and had been in operation for six months. It was planned to extend the standard procedure throughout the group by the summer of 1967. Further study was being undertaken, especially with regard to times of drug administration. It had to be remembered that a drug must be given at a time when it was most likely to be effective and this might not necessarily be at the doctor's or nurse's convenience. The new system had achieved a reduction in errors, also reduction in nurses' and pharmacists' time. It had been possible to fill two established posts for pharmacists with technicians.

3.3 Mr. Carrington spoke to three papers*, which were circulated, on various aspects of the drug scheme which had been planned and introduced at the new hospital at Truro. The scheme was to run for one year, after which it would be reviewed. The commissioning of a new hospital presented a golden opportunity to institute new systems and to standardize procedures. The implementation of new ideas had been a constant feature of the commissioning programme and much had been achieved by small informal meetings of staff concerned with a particu-

* Available from the King's Fund Hospital Centre, 24 Nutford Place, London, W.1.

lar problem. The system for prescribing, distribution and administration of drugs at the Royal Cornwall Hospital was similar to that of the Westminster Hospital, albeit there were some differences. It was important in setting up an efficient system that it should disturb the patient as little as possible. The layout of the hospital and of the wards lent themselves particularly well to the drug scheme. Wards were arranged in a single block of six storeys served by four high speed lifts. Each ward had a central corridor running its full length which meant that the pharmacist could enter and have access to the ward sister's or doctor's office, also to the drug storage cupboards, without disturbing patients.

The integration of the pharmacist into the ward situation had greatly improved staff relations although it had presented a considerable challenge to the individual pharmacist in adapting himself to his new role. However, this had stimulated him to keep more up-to-date on all aspects of drugs, and more important, had encouraged him to present information in such a way that its clinical application was easy. A closer identification with the patient had resulted. The pharmacist was sometimes called to the bedside for an opinion which, together with his attendance at various lectures and conferences, helped him to look at problems from the viewpoint of his clinical colleagues.

Mr. Carrington reiterated other speakers' views on the aims to be achieved with prescription sheets. He felt that these had been met at Truro. An initial criticism of the sheet used was the space allotted for the name of the drug and for the prescriber's name. It was interesting to note that doctors' writing had tended to become smaller and neater to fit the space. This indicated that an efficiently designed sheet encouraged proper

recording.

The operation of a complete top-up system for intravenous fluids and bulk disinfectants had proved successful and had saved nurses' time. The possibility of supplying all stock drugs, with the exception of Dangerous Drugs and Schedule Poisons, on a top-up basis might be the ultimate answer to problems of stock distribution and control. This was being investigated and a pilot scheme for one ward considered. Meanwhile, the present scheme enabled the pharmacist to have day-to-day control of ward stocks, as well as individual medications, on the basis of an agreed stock list for each ward and department. The use of a prepackaging system had ensured, not only the provision of a clean, freshly filled, freshly labelled container, but also the rapid turn-round of ward stock requisitions. This was essential at the Royal Cornwall Hospital as the pharmacy served 11 hospitals which involved a complicated transport timetable worked out to fine limits.

The increasing national problem of drug abuse enhanced the need for security. All drugs, except those on top-up supply, were checked and signed for by nursing staff then immediately locked away in the appropriate cupboard. Only drugs in current use were kept in the locked medicine trolley. When Dangerous Drugs and Schedule Poisons subject to special control were requisitioned, the remaining stock and the ward record book were sent with the requisition to enable the pharmacist to check stock levels against the balance. This was a departure from recommended Aitken Committee Procedure but the extra time spent in day-to-day control more than offset the lengthy 'post-mortems' which could occur after an apparent loss of such drugs.

3.4 Mr. Ross said that his talk was directed more

towards nursing staff. Various alternatives had been put forward for the prevention of medication errors. The main emphasis in each case had been the advantages gained from improved prescription sheets and pharmaceutical checking of the completed prescriptions. In his view the chinks in the armour all appeared to devolve on the use of medicines held as stock items on wards. The main disadvantages of holding ward stocks were: large quantities of drugs held in reserve which led to deterioration; opportunities for misappropriation of drugs; no check on the number of doses dispensed from a bottle; the wrong medication being given by a nurse through incorrect deciphering of an illegible prescription.

A new system had been designed to provide as many safeguards as possible without unduly increasing the work load of medical, nursing or pharmaceutical staff. The institution of a complete individual dispensing system allowed checks to be made as to whether or not a particular dose had been administered by counting the doses remaining in the container and all prescriptions could be checked by the pharmacist. To overcome the difficulty of storing the increased number of containers, a special medicine storage trolley had been designed and built. It consisted of a lockable cupboard incorporating sufficient small drawers to allocate one drawer for all medicines supplied to one patient. The supply of individual containers for each patient abolished the need for ward stocks provided an emergency drug cupboard was available. Nevertheless some items were retained as stocks: intravenous fluids because of their bulk, Dangerous Drugs to allow the statutory records to be kept, and sisters' medications - entirely due to his inability to prevent their use despite all adverse criticism of the custom. The ward medicine round now consisted of a nurse wheeling the trolley to a patient's bedside, taking out the drawer for that patient, checking from the prescription sheet

what dose was required and giving it direct to the patient from the labelled bottle. This eliminated several procedures, saving time and removing any possibility of error.

All prescriptions were sent to the pharmacy for dispensing as soon as they were written. A standard quantity was supplied (usually for seven days) which was noted on the sheet and further supplies were repeated until the prescription was deleted. One major argument which had been raised against the system was that the sheets left the ward. However, care was exercised that they were not sent to the pharmacy at times when they could not be dealt with immediately. Only in rare instances was a sheet needed on a ward while it was away in the pharmacy.

It had been found that wastage and over-ordering of drugs were reduced and the work load had been lowered due to the marked reduction of medicines supplied to wards. The scheme had many advantages over the old method of distribution and together with an improved design of prescription sheet went a long way to eliminating errors of medication.

4 DISCUSSION

4.1 Misappropriation of Drugs A pharmacist wondered what check there was on misappropriation of drugs if the majority were being supplied as ward stocks. Mr. Baker said that detailed recording did not necessarily improve security but it did worsen the nurses' work load to an intolerable extent. He thought that doctors, nurses and pharmacists, professional and responsible people, could be

trusted to use a sound, rational system properly.

4.2 Standard Packs In discussing the prepacking of standard units of commonly used drugs, a pharmacist suggested that it should be done by manufacturers and it was up to the Ministry of Health to give them a lead in this. Mr. Baker agreed that it would be better done by manufacturers and not left to pharmacy departments to undertake.

4.3 Catalogue of Approved Names Again the Ministry of Health should give the lead, it was suggested, in seeing that a catalogue of approved names for drugs was established which were clear and easy to use. The use of automation, linking the approved name to a code name, to help in preparation of drugs, was discussed. Dr. Weir thought that the cost would be prohibitive.

4.4 Cancellation of Prescriptions A doctor approved the new prescription sheets described by various speakers but, in referring to that of Aberdeen, regretted the need for a separate discontinuation column. Why not, he said, ask doctors to enter 14 days' treatment, or whatever was appropriate, alongside the prescription. Dr. Weir thought there might have been medical opposition to this. In designing a new sheet some steps had to be taken slowly.

4.5 Multiplicity of Drugs Prescribed In the provinces, a pharmacist said, the young houseman tended to prescribe many drugs whereas the older consultant stuck to a known few. Dr. Vere replied that while this was so it should be remembered that the houseman saw the patient much more frequently. He might have tried the known, suggested drugs but there was the patient getting worse. Certainly, he could become bewildered at the array of drugs available and make mistakes. Dr. Vere thought that the dilemma presented by complicated approved names as against danger-

ous proprietary names was a matter of urgency.

4.6 Problems in Psychiatric Hospitals The chief male nurse of a large psychiatric hospital drew the attention of the conference to the fact that psychiatric hospitals had more and worse problems than other hospitals with regard to drugs. Psychiatric nurses were responsible for large numbers of patients, these patients being given large numbers of drugs. He appealed to the panel of speakers in particular to consider this.

4.7 System at Aberdeen The group pharmacist from Aberdeen spoke on a number of points regarding the system there. It had eliminated the need for nurses to order any drugs at all. Facts had shown that 70% of a 24-hour ward stock was for dispensing to one patient only. He thought it essential that there should be a ward pharmacist: he provided information to the housemen; he answered queries from the ward staff; he monitored prescriptions; he saw that drugs were readily available. Mr. Calder emphasized the value at Aberdeen of the Pharmaceutical Services Committee. In summing up he said that while there might not have been any actual saving of nurses' and pharmacists' time, there was tremendous advantage in the fact that they were all better deployed as a result of the new system.

5 SYNDICATE REPORTS

For an hour during the afternoon, the conference was divided into five groups for syndicate discussion, each group being given two questions to consider and report upon.

5.1 Group A

Question 1: What are the basic problems in seeking to ensure that patients always receive the correct medicine at the proper time? Are they due to lack of information, bad communications, insufficient or inadequately trained staff? Or do traditional systems present a wrong approach to the problems? Have they become inadequate because of developments in therapeutics?

Question 2: Can we expect automatic data processing to have a real effect on this aspect of hospital treatment within the next five years? If so what differences may this be expected to lead to in prescribing, distributing and administering drugs? Ought we to take any action (or avoid doing certain things) because of this?

The group thought that many problems would be solved by documentation. There should be clear and concise directions on a form with time columns to indicate frequency of administration so eliminating Latin abbreviations. The times should be convenient to nursing routine. The Aberdeen prescription sheet could be improved by showing the times of main drug rounds in heavier print. Each drug should be clearly identified on the label of its container by an official or approved name. If a proprietary name were written on the prescription, the pharmacist should amend it by adding the standard name. Basically the group liked the method of individual prescribing as outlined by Mr. Ross but they noted that it did not provide for a record of who had administered the actual doses. It appeared to save nurses' time but would significantly increase the work load of the pharmacy. Good administration should reduce the length of time prescription sheets were away from wards but, in any case, this problem was thought to be exaggerated. Resuscitative drugs and limited ward stocks should be available.

The group thought that automatic data processing would be

very expensive. It would not aid to any great degree the administration of drugs to patients and could introduce additional error in transcription. It might have something to offer in the ordering and maintaining of stocks in a hospital pharmacy.

5.2 Group B

Question 3: What is the function and purpose of the medicine card or drug treatment sheet? Is it desirable that it should include other matter such as instructions about diet or nursing care?

Question 4: How can the monitoring of the side effects of drugs be more effectively carried out?

The group said it was to give clear, unequivocal instruction as to drug, dose, route of administration and frequency. It should have three main objectives: to enable the nurse to give the drug prescribed; to enable the pharmacist to supply the drug prescribed; and to provide a good record of treatment. There should be a long-term view towards automation whereby the act of producing a drug should produce a record. The group were emphatic that instructions regarding nursing care should not be included. If it were thought necessary for nursing instructions to be endorsed by a doctor, then this could be done on the nursing record. A small majority of the group thought that diet instructions could be included.

The group had found it difficult to reach a firm conclusion as to whether a ward pharmacist should collect information about the effects of drugs. However, the pharmacist should keep medical and nursing staff informed about the known side effects of drugs in use. Certainly, the doctor and nurse had a major responsibility in collecting and reporting information regarding effects of drugs. It was thought that the nurse was better at observing minor

effects and the doctor, major effects. The case summary in the medical record should include such information. The group thought it would be a good idea if there were nursing care summaries as well and considered it a bad thing that nursing notes were kept separate from medical records when filed. Both nursing and medical records should include unexplained events which occurred during patients' treatment. Information obtained from the Dunlop Committee's 'yellow cards' should be collected centrally by the hospital, then forwarded. One answer to monitoring was to compile a drug index on the basis of records which linked a drug to a patient.

5.3 Group C Question 5: Is it (a) desirable and (b) possible to record the administration of every medicament either on the same sheet as the prescription, or should there be a separate sheet for recording administration?

Question 6: How important is it that records of drug administration should form a permanent part of the treatment notes of a patient?

The group thought that it was desirable to record every medicament as this was the only way to check errors or record reactions, also to assess prescribing habits. The time spent by nurses on such recording was justifiable provided the recording was accurate. It was appreciated that it would be especially difficult to carry out in psychiatric hospitals where wards were large and staff was short. As to the question of whether there should be one sheet or a separate recording sheet, the group considered that the combined one as used by The London Hospital might prove unwieldy for the nurse to carry about also it could become unbalanced, so reducing space for prescribing, as recording and prescribing did not run parallel. They favoured the Aberdeen system with its separate recording sheet but emphasized the need for it and the prescription sheet to be kept in proximity. It

was noted that only one prescription sheet was needed for 95% of patients admitted. Dangerous Drugs would still need a separate record which could be kept by the ward pharmacist, where there was one, or by the ward sister.

A record of drug administration should form a permanent part of the treatment notes of a patient but would be better kept on a separate record sheet. The record could eventually be absorbed into automatic data processing and would be valuable in assessing the side effects of drugs.

5.4 Group D

Question 7: Is it sound policy to permit nursing staff to administer linctus, laxatives, antacids, mild analgesics, evacuant suppositories on their own initiative? If permission is given for this, should these administrations be recorded in the notes and authorised subsequently by a doctor?

Question 8: What is the most satisfactory method of ensuring that supplies of necessary drugs are available whenever required, e.g., when the pharmacy is closed, in emergency situations, etc.?

The group agreed unanimously that it was bad policy. All medicaments should be regarded as drugs and should be given only on the instruction of a doctor. However, the group realised that this was not always practicable, for example, in those hospitals where wards were not visited every day by a doctor. In such or similar cases of difficulty, administration of medicaments by nursing staff should be recorded and subsequently endorsed by the appropriate doctor.

There was less agreement among the group regarding the next question. There were three possible solutions: the pharmacy key should be available always; there should

be an emergency cupboard, available to medical staff, carrying an adequate stock of drugs likely to be needed; there should be a pharmacist on call at all times, preferably on the basis of a rota system. Half the group favoured adequate stocks being held on wards provided they were under the control of the pharmacist, half thought that wards should carry minimum stocks restricted to those used for emergencies.

5.5 Group E

Question 9: What are the specific functions of the doctor, nurse and pharmacist in drug treatment of patients? Do they overlap? Can these three be integrated into a team more closely than they are at present? Is it important that they should be?

Question 10: Do doctors need more training in prescribing? Ought nurses to receive more thorough training in the properties and uses of drugs? Should prescribing and administering drugs become specialities undertaken only by specially trained doctors and nurses?

The group were unable to reach agreement on their first question. Nevertheless, there was surely scope for trying different systems. Probably each hospital would have to work out the system which served it best. Some members thought the pharmacist should stay in his pharmacy. If the pharmacist were responsible for ordering ward drugs, then nurses might not get sufficient knowledge about the use of drugs. The young and recently qualified pharmacist attached to wards was not ready to monitor drugs.

The group thought that housemen did need more training in prescribing but questioned how and when this was to be done. The medical student only got the academic view of the subject. Housemen benefited from the presence of ward pharmacists. Probably the best results were obtained

by informal training. They questioned how much time should be devoted by the consultant and registrar to this type of training and thought that in many cases it was not enough. Nurses too needed more training but the group were undecided as to what form it should take. As regards specialization, the group's answer was an emphatic no.

6 DISCUSSION

6.1 Extent and Scope of Experiments Mr. Baker said that his pharmacy provided a group service to the hospitals in the Westminster group. At present the new system was fully operational in the main hospital of 500 beds, at Roehampton, a hospital of 450 beds and in the Gordon Hospital of 100 beds. As he had already said it was planned to extend the system throughout the group in 1967. In answer to the same question, Dr. Weir said that the Aberdeen system applied to 1,000 general beds and 1,200 psychiatric beds.

6.2 Hospitals without Pharmacists A pharmacist wanted to know whether there were any schemes operating to cover hospitals which had no pharmacist. Mr. Baker said that he was proposing to close the pharmacy department in one of the hospitals of the Westminster group and send a pharmacist there by taxi every day for half-an-hour in addition to the service provided by the group pharmacy.

6.3 Arrangements for Weekends A doctor asked whether it was common practice for pharmacy departments to open for an hour or two on Saturdays and Sundays. In reply a pharmacist said that at his hospital the practice

had been discontinued because there had been no demand for this service. Adequate 'housekeeping' on the part of the nursing staff together with provision of an emergency cupboard should suffice. Mr. Raine agreed that there should be no need for a 24-hour dispensing service but emphasized the need for pharmaceutical advice to be available at all times to doctors and nurses. Professor Wilson considered that a hospital's pharmacy service should be comparable to its pathology service.

6.4 Group Pharmacies If all medicaments were provided by a group pharmacy for a number of small hospitals, questioned a pharmacist, would not the gap between doctor and pharmacist be widened? He thought the aim should be to de-centralize rather than to centralize. Mr. Carrington thought that the hospital service could not hope to attract good pharmacists to work in small and often inadequate departments. The answer might well be to provide a mobile pharmacy to serve the smaller hospitals in addition to the main group pharmacy; alternatively, as Mr. Baker had suggested, to provide a pharmacist at a particular place at a particular time. This, of course, called for good organization. Another pharmacist thought that the smaller hospitals in his group now got a better service with the establishment of a group pharmacy. Also the service provided better information and a wider choice of stock.

6.5 Special Units A nurse asked whether ward pharmacists had been introduced into special units. Mr. Baker replied that they were used in the intensive care unit but not in the operating theatre.

6.6 Recently Qualified Pharmacists Mr. Raine referred to the point raised by Group E regarding the lack of experience of the newly qualified pharmacist

and how this would affect his value on the wards. He might not be able to impart a great deal of information, nevertheless he was valuable as his presence significantly improved drug distribution.

6.7 Illegible Prescriptions Professor Wilson returned to the subject of doctors' illegible handwriting. Dr. Vere thought it might be possible to issue adhesive labels of all the commonly used drugs for doctors to attach to prescription sheets. Another suggestion was that ward clerks should type prescriptions after doctors had written them but the disadvantage was that this involved transcription with its hazard of error. Pharmacists were urged to return any illegible prescriptions to the doctors concerned.