and may be used in very toxic children, though only for a brief period and with full awareness of its danger in relation to the ulcerated bowel wall. It is perhaps significant that the need for corticosteroids has diminished over the years as the use of intravenous infusions has increased.

In addition to requiring blood and electrolyte replacements, unconscious children were often also suffering from hypoglycaemia as a result of native medicine poisoning and therefore in urgent need of 50% glucose infusion. Acidosis—a clinical diagnosis, in many cases manifested by deep, sighing breathing—required immediate 50-100 ml of 4.2% bicarbonate infusion before correcting sodium and potassium losses.

Blood transfusion for severe anaemia produced in 10 cases a swinging fever which was later proved to be due to typhoid fever (paratyphoid organisms were grown on culture in an even greater number of similar cases).

Conclusion

Typhoid fever is reportedly rare in infancy and early childhood.^{5 6} Ikeme and Anan¹ reported only 29 cases in patients under the age of 10 in a total of 214 typhoid admissions to the Ibadan Teaching Hospital. Huckstep⁴ reported from East Africa a series of 240 cases of which 56 were in children aged between 2 and 15, and only six of these were less than 5. Pobee⁷ failed to report one case in a patient under 10 years of age from a fever hospital in Accra. These reports contrast markedly with our series, where 42% of all patients seen in the hospital were under 10 years of age.

The presentation of typhoid fever in children aged over 5 closely resembles that in older patients. Younger children and infants have more non-specific symptoms. Fever, with or without convulsions, diarrhoea and vomiting, dehydration, and anaemia are all common paediatric problems anywhere in the world, and especially in the tropics. Many children with malaria or an infectious disease present with clinical features resembling those of typhoid fever. Suspicion is of paramount importance in the diagnosis of typhoid, and when there is an epidemic greater care should be taken to exclude it in any young child who is febrile.

We have found the diazo urine test a useful, simple, and cheap test which the nursing staff can put in hand before the patient sees the doctor. The reagents must always be freshly made or the results can be misleading. Blood culture

and, in cases with diarrhoea, stool culture are the most rewarding diagnostic procedures. In differential white cell counts eosinophils are usually decreased or absent in typhoid.⁶ A high white count, certainly above 15,000/mm³, makes a diagnosis of typhoid less certain.

In the last two years of our study the importance of doing blood cultures in children who develop rigors and swinging fever after transfusion for severe anaemia became apparent. In the first few positive cases it was thought that the donor blood had been infected, but this was disproved by negative culture of the remaining donor blood. It seems that severely anaemic children with typhoid are sometimes too ill to be pyrexial. I could find no previous reference to this phenomenon in the literature on typhoid, and, as already mentioned, this sequence of events is even more common with paratyphoid. Severe anaemia in an infant or young child without other apparent cause must suggest a possible diagnosis of enteric fever.

The low incidence of haemorrhage and ileal perforation in children aged under 5 confirms previous reports. These two factors are the major cause of death in typhoid fever, and the more favourable prognosis in infants is probably related to their relative immunity to severe ileal ulceration.

Without the clinical assistance of all the doctors in the paediatric department this report would not have been possible. Most patients under 2 years were collected during the period when Dr. M. Duggan was paediatrician, and to her must go the credit for recognizing the association of typhoid with anaemia. Dr. C. A. Pearson, medical superintendent and physician, and Mr. L. Beyer, laboratory superintendent, have also made their own distinctive contribution.

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General Practice Observed

New Record Folder for Use in General Practice

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Summary

A new concept for filing medical records in general practice is described, based on an A4-size folder; in

experimental use in 40 practices doctors were generally in favour of the new system.

Introduction

In 1967 a project was started in Wantage with the aim of designing a new record folder for general practice. Over the past three years we have experimented with possible alternatives. Our view is that the general practitioner's record is the key document to the whole of the patient's medical history,

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whereas hospital and local authority records often cover only a single episode in a patient's life. Moreover, it is the only full medical record that follows the patient if he moves from one district to another.

Our view, expressed in a previous communication,¹ is that in order to fulfil this role adequately a record folder for use in general practice must have all of the contents filed unfolded in a settled order so that they can be easily identified and immediately available. Our choice of international paper size A4 was determined by the fact that this is the size being adopted by all hospitals in line with the recommendations of the Tunbridge report.² We felt it desirable to make provision for the existing medical record envelope (EC5 and EC6) in the new folder, at least for the time being. Evidence of the tide in favour of a new records system is shown in the report of the Gillie Committee,³ and by Wallace and Havard Davies in Cardiff,⁴ Cormack in Edinburgh,⁵ Coulay in Southampton,⁶ and Taylor in London.⁸

Outline of Project

In the Spring of 1968 we first sought the advice of the Ministry of Health and Social Security and informal discussions quickly followed. The first stage of this project consisted in designing and producing 100 folders and inside sheets for preliminary trial. Design was limited by cost and a constant effort was made to keep this to an acceptable figure. When a number of these folders were circulated to interested people we received many useful criticisms and as a result modified the design for the next stage. One thing we learnt: general practitioners are intensely individual, and it was clearly impossible to produce a design that pleased everyone in every detail. Our aim was to keep the design as simple as possible, both in the number of sheets and in their layout.

The second stage of the project consisted in approaching 50 practices of various size and type, and 46 agreed to take part in an experiment. Five thousand folders of modified design were ordered and were delivered in May 1970. To gain as much experience as possible we suggested to the practitioners taking part that they select 50 patients who were frequent attenders and transfer their records to these folders. In this way we hoped to gain the experience of the doctors, nurses, and secretarial staff who had used the folders over a period of six to nine months. The experience, criticisms, and opinions of everyone involved were evaluated by the Organization and Method Division of the Oxford Regional Hospital Board by means of a questionnaire. During this stage of the experiment each of the two practices in Wantage converted about 1,000 folders and gained considerable experience of their use. The results of this evaluation were produced in May 1971 and are briefly summarized below.

Description of Folder

This record system consists of the folder (31 by 24 cm) and seven different sheets of paper of A4 size (29.7 by 21.0 cm). On the front of the folder there are spaces for recording the patient's name, N.H.S. number, date of birth, and addresses, and on the inside printed areas for recording drug sensitivities and important drugs that are being used. We deliberately kept the details recorded on the folder to a minimum at this stage. Pockets on the inside of the front flap of the folder are designed to take the medical record envelope, forms EC5 and 6, and the continuation cards (form EC7 and 8), and a pocket on the inside of the back flap of the folder is provided for temporary filing. The folder has two spines, staggered to reduce thickness, and the patient's records are attached to the front and back of each spine by elastic tags passed through punched holes, thus providing four separate filing positions. These features are shown in Figs. 1-3. The sheets contained inside are as follows:

FIG. 1—Record folder and contents.

FIG. 2—Inside of folder showing filing positions.

X-RAY AND PATHOLOGY INVESTIGATIONS		Forenames	Surname
		Address	Date of Birth
8			8
7			7
6			6
5			5
4			4
3			3
2			2
1			1

START HERE

Notes: Remove backing strip to reveal gummed area.
The Report Strip along top edge of Reporting Sheet from bottom upwards as indicated.

FIG. 3—X-ray and pathological investigation sheet bearing eight gummed areas for attachment of reports.

clinical notes sheet, summary sheet, nurse's and health visitor's sheet, immunization record sheet, maternity record sheet, x-ray and pathological report sheet, and general purpose chart.

The clinical notes sheet, which is punch-holed at both margins so that it can be reversed, is printed on white paper, and the summary sheet, nurse's and health visitors' sheet, and immunization record sheet are printed in different colours for easy identification. The x-ray and pathological investigation sheet contains eight strips covering gummed areas where reports can be quickly mounted in order.

The sequence in which these sheets should be filed and whether uniformity would be acceptable in general practice were discussed in detail. Practices will probably hold different

views (indeed, the two practices in Wantage differed slightly) but in general we felt that: (1) the clinical notes and summary sheets, and probably the immunization and nurse's and health visitor's sheets, should be filed on the front spine, and (2) hospital letters, reports, pathological and x-ray reports (mounted on the special sheet), and the remaining sheets should be filed on the back spine.

Any record system should be flexible to allow for changes in medical practice, and with an A4 folder new sheets can be introduced as required.

Storage and Identification

These record folders were designed for lateral filing on open shelves with the printing on the folder placed at one side. The number of folders that can be filed per foot of shelving depends on the volume of records they contain, varying from 30 to 45 per foot. The possibility of using other methods of filing A4 folders that are much more economical in storage space is being explored.*

Cost

Costing of this record system was carried out in detail, and on the latest available estimates (1971) the average cost of a folder and inside sheets is just under 7p. This compares favourably with the present cost of the medical record envelope, the gusseted envelope, and the inside continuation sheets. Probably bulk production would reduce the cost of the A4 folder.

Report by Oxford Regional Hospital Board

Questionnaires were sent to 46 practices taking part in the project and completed replies were received from 40. Three practices did not reply even when reminded. The remaining three did not complete the questionnaires but replied giving reasons of overwork or inability to use the sample folders owing to lack of storage space.

The questionnaire covered all aspects of this records system in detail. The replies, which were published by the Oxford Regional Hospital Board in a report of this experiment, indicated a desire for a radical change in the design of general-practitioner records. This was shown by the answers given to three questions at the beginning of the questionnaire, which were as follows.

(1) "Should the medical record envelope be replaced?" The replies to this question were: completely replaced, 38; partially replaced, 1, and not replaced, 1.

(2) "What size of folder should be used in general practice?" The replies to this question were: size A4, 37; size A5, 2; and medical record envelope, 1.

(3) "If A4 folders become generally available, for how many of your patients would you use them?" The replies to this question were: for all patients, 25; for some patients, 13; and not at all, 2.

It was recognized that the main problem that would result from using A4 folders in place of medical record envelopes would be the extra space needed for storing the records. Half of the respondents said that they would already have enough room to store all their patient's records in A4 folders.

Conclusion

The results of the experiment described here suggest that a large number of doctors would like to change from the present medical record envelope to an A4-size folder. The 40 practices that took part in the experiment showed by doing so that they were interested in the problem of medical records; they were not, therefore, necessarily a representative sample of all general

practitioners in Britain, and this was realized when the experiment was planned. Further evidence of the desire for a new system was provided by the survey carried out by Cormack,⁸ which was based on a representative sample of general practitioners in Scotland. His results showed that 49% of all general practitioners, and most of those who qualified after 1950 were in favour of a system based on a "quarto-sized" folder.

There are, of course, disadvantages in changing to an A4 system. The main disadvantage concerns the storage of records in surgery or health centre. Practices that have invested in filing cabinets designed to take medical record envelopes will find that they are not adaptable for A4 folders, and in some practices it may be impossible to find space to store records for all patients in A4 folders. For the latter a dual system of records would still give great advantages. We have estimated that the number of patients with "fat" medical record envelopes is a small proportion of the total, and for these an A4 system is particularly valuable. Both practices in Wantage, which operate in very restricted premises, have run a dual system for more than a year, based on converting about 10% of patients' records. We have found that it is easy to work, using a tracer card in the medical record filing cabinets to indicate that a patient's records have been converted into an A4 folder and filed elsewhere. Total conversion is undoubtedly the ideal system for those who want to use A4 folders, and doctors who are planning to move into new surgery premises or health centres might be well advised to plan a records department on the basis of using A4 folders.

Another disadvantage is the time and effort required to transfer the records from the medical record envelope to the A4 folder. This, however, is a task that can be undertaken by secretarial staff, and since the volume of medical records is growing all the time the present situation will only get worse as time passes.

A third disadvantage that is frequently mentioned is the extra size of an A4 folder when taken into a patient's home. This is more than compensated for by the ease with which the records are found and by the fact that because they are fixed to the folder they do not drop out.

The main advantage of the folder is the ease with which letters and reports can be found, because they are unfolded and fixed in chronological order; the time wasted and frustration caused by the medical record envelope are avoided. A further advantage of the folder is the ease with which unwanted records can be seen and thrown away. These advantages were appreciated by everyone who saw and used this records system.

In addition the integration of doctors' records with those of the practice team (nurse, health visitor, midwife, etc.) is an obvious step in the development of general practice team work, and by using an A4 system the integration of hospital and general practice records is made easier. It may well be that in the future this is likely to be a subject of increasing importance. Finally, the advantages of having enough space to write adequate notes and a predictable order for all parts of the medical records more than compensate for the effort involved in converting to the new system.

In conclusion we wish to emphasize that the system described here is not, in our opinion, a perfect one. Our experience over two years in using the folder has shown that some of the details of design could be improved, and we have received many valuable suggestions from the general practitioners who have helped us. Our hope is that an A4 system similar to but better than the one described here will be made available in the near future.

This project was financed by a grant from the Department of Health and Social Security. It is a pleasure to acknowledge not only the financial help but the encouragement and friendliness of those at the Department who worked with us. In addition the work was done in co-operation with the Oxford Regional Hospital Board, the records department of the United Oxford Hospitals, and the Berkshire Health Authority. We are grateful to all who

*For instance, a system such as Scanex, which consists of five circular shelves mounted on and rotating around a central axis, enables 1,500 A4 folders to be filed in a space 213 cm high by 91 cm wide by 91 cm deep.

helped us in the project, and in particular to Mr. John Davies, group medical records officer, United Oxford Hospitals, and Mr. Griffin and Mr. Eddy, of the Organization and Methods Division of the Oxford Regional Hospital Board. Finally, we are most grateful to our secretarial staffs for their considerable help.

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Scientific Basis of Clinical Practice

The Future of Community Medicine

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Since 1 April 1948, when the National Health Service came into operation, there have been major developments in the practice of medicine, and at the present time we are in a period of transition and some uncertainty. Most people dislike and are suspicious of change, and doctors are no exception. Nevertheless, changes are inevitable and will occur both in the practice of medicine and in the structure of the National Health Service.

Basically there are three major matters which compel us to re-examine both our present position and the future development of a comprehensive health service: a shortage of medical manpower; the redistribution of population; and a change in the incidence and treatment of disease.

Medical Manpower

Before the war three-quarters of the medical profession were in general practice, but since then as a result of an expansion in the hospital sector and its related specialties the proportion of general practitioners in the Health Service has steadily declined, to about slightly less than half of all doctors today. Between 1964 and 1968 their absolute numbers also fell (Table I).

TABLE I—Doctors in or Entering General Practice

Year	Total New Entrants	Net Gain or Loss	Total
1960	981		19,928
1961	971	+260	20,188
1962	1,017	+138	20,326
1963	1,021	+23	20,349
1964	910	-103	20,246
1965	870	-219	20,027
1966	877	-183	19,844
1967	884	+5	18,894
1968	964	+121	18,970
*1969	531	+151	20,121

*1969—figures for 9/12 only.

Dudley, Worcestershire

G. M. REYNOLDS, M.B., D.P.H., Medical Officer of Health

In 1957 the Willink Committee¹ suggested that student intake into medical schools should be reduced. This recommendation was accepted by the government of the day and implemented for a period. This may well explain, at least in part, the decline in the number of doctors entering general practice in the 1960s. Training medical students is, however, only a part of the picture as medical manpower is affected by migration. The Willink Committee did not foresee the loss by emigration of British trained doctors, but Seale calculated that in the five years up to 1960 the rate of emigration of British doctors was equivalent to one-third of the annual output of the medical schools in Great Britain and Ireland. This figure was disputed but probably the net loss by migration from Great Britain of British and Irish born doctors was 350 for each of the years 1965-6 and 1966-7. The present rate of net loss is about 380 to 400 a year—that is, about one-fifth of the total output.

IMMIGRANT DOCTORS

Immigrant doctors have also played an important part in the medical manpower of this country. Initially, overseas doctors practised mainly in the hospital service, but in recent years the number entering general practice has increased. During the middle 1960s the proportion of recruits to practice with United Kingdom or Irish qualification fell from 96% to 80%, while that of recruits with Asian medical degrees rose from 4% to 18%.

Towards the end of 1970 overseas doctors formed 33.2% of all hospital staff in England and Wales. They constituted one-eighth of all consultants, one-fifth of the senior registrars, just under three-fifths of the registrars, and just over three-fifths of the senior house officers. They formed 48% of all doctors in the training grade posts in the hospital service. One general practitioner in eight was overseas-born, but over a quarter of the new general practitioners joining the Service were overseas-born.

The shortage of doctors is worldwide—in May 1971 it was reported that the United States, with an active doctor population exceeding 294,000 in 1967, with a quarter of its junior hospital posts unfilled, appeared to require annually about 7,000 doctors to replace deaths and retirements alone.² A total of 16,000 new doctors was required annually—the output in 1967 was 7,500, in addition to 2,000 U.S. nationals