

An analysis of lay medicine*

C. P. ELLIOTT-BINNS, M.R.C.G.P., D.C.H., D.Obst.R.C.O.G.
Northampton

MEDICAL services have only recently been freely available. Previously medical care meant to most people help from relatives, neighbours or semi-trained 'handywomen', who depended largely on traditional remedies.

*Wel may the sike men biwaille and wepe,
There as ther nye no wyf the house to kepe*

wrote Chaucer, while in 1660 the villagers of Dry Drayton stated: "None practice physic nor professeth midwifery but charitably one neighbour helpeth another".

Even in a comprehensive Health Service it has been shown by Horder and Horder (1954), Butterfield (1965), and Wadsworth *et al.* (1971) that only about 25 per cent of illness is finally dealt with by a doctor.

Method and patients

A survey was carried out on 1,000 patients attending a general practitioner's surgery in Northampton. Each fifth patient was selected or, if he did not present a new symptom, the next in order was chosen. When an adult attended with a child it was the adult who was counted as the patient.

The patient was first asked if he had received any previous advice or treatment for the particular symptom. He was then asked from a questionnaire the source, type and soundness of advice and whether or not he accepted it. Social factors such as age, domicile and social class were recorded and the type of illness was noted.

In practice most factors fitted easily into a particular category although a few proved border line.

Source

1. Husband or wife.
2. Other relative.
3. Friend.
4. Nurse or other professional.
5. Chemist.
6. Magazine, book, television.
7. Self-treatment.

Type

1. 'Go to the doctor'.
2. Other advice.
3. Medicine.
4. Home remedy.

Soundness

1. Complete (+3).
2. Good (+2).
3. Slightly helpful (+1).
4. Harmless (0).
5. Harmful (-1).

*Based on a thesis submitted for the M.D. degree of Cambridge University.

Statistics

The results of the questionnaire was transferred to coded cards and thence to punch cards which were mechanically sorted by the Department of Statistics of the Oxford Regional Board. The validity of results were tested by the Chi-squared test or Z-score, whichever was apt. The scoring system for soundness was considered too artificial for statistical analysis but nonetheless provided interesting information.

Results

The 1,000 patients admitted to receiving advice from 2,285 sources of which 1,764 were outside sources and 521 self-advice. Thirty-five patients received advice from five or more sources, the highest number being 11 (a boy with acne). Skin conditions provided 43 per cent of this group which was significantly higher than expected ($P > 0.01$).

No outside advice was received by 122 patients, but 82 of these had used self-treatment of some kind. The sources of advice are shown in Table 1 and the estimated soundness in Table 2.

TABLE 1
SOURCES OF ADVICE









| | | |
|-------------------|-----|---|
| Self-treatment | 521 |  |
| Friend | 499 |  |
| Husband or wife | 466 |  |
| Other relative | 387 |  |
| Magazine, books | 162 |  |
| Chemists | 108 |  |
| Nurses (a) casual | 102 |  |
| (b) professional | 52 |  |

TABLE 2
SOUNDNESS OF ADVICE GIVEN BY DIFFERENT ADVISERS

| Advisers | Complete | Good | Slightly helpful | Harmless | Harmful | Harmful (%) | Score |
|-----------------|----------|------|------------------|----------|---------|-------------|-------|
| Chemist | 11 | 70 | 19 | 6 | 2 | 2 | 1.76 |
| Nurse | 21 | 86 | 40 | 7 | 11 | 7 | 1.61 |
| Husband or wife | 18 | 185 | 201 | 28 | 14 | 3 | 1.35 |
| Self treatment | 26 | 240 | 152 | 90 | 13 | 3 | 1.34 |
| Other relatives | 13 | 169 | 141 | 49 | 15 | 4 | 1.32 |
| Friend | 19 | 191 | 198 | 55 | 36 | 7 | 1.20 |
| Magazines | 6 | 45 | 53 | 24 | 32 | 20 | 0.81 |
| All sources | 114 | 986 | 804 | 258 | 123 | 5 | 1.31 |

The soundness of advice was constant for advisers between the ages of 21 and 60 but less good above and below that age.

The advice of chemists was significantly more acceptable than the mean while that of friends was marginally less acceptable.

TABLE 3
SOUNDNESS OF ADVICE GIVEN BY DIFFERENT AGE GROUPS

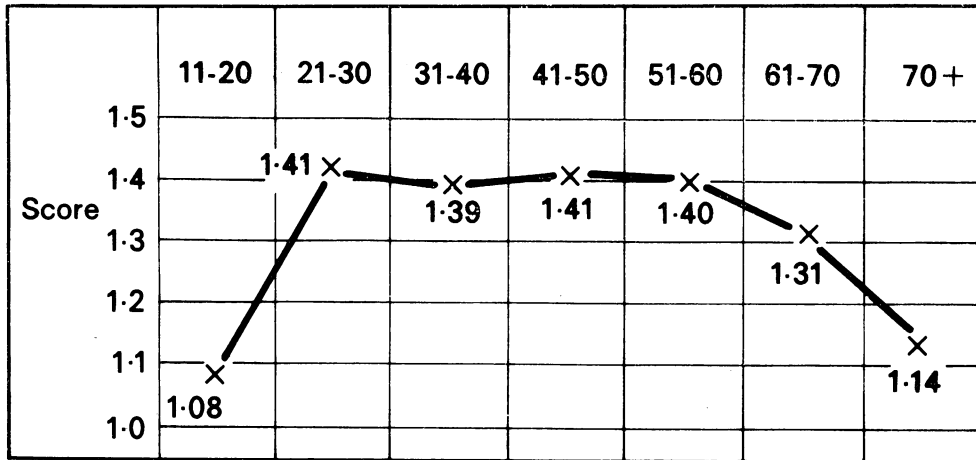


TABLE 4
PERCENTAGE OF ADVICE ACCEPTED FROM DIFFERENT ADVISERS

| | | |
|--------------------|----|---------------------------|
| Chemist | 95 | Significant at 0.01 level |
| Nurse, etc. | 93 | |
| Husband or wife | 90 | Significant at 0.05 level |
| Other relative | 86 | |
| Impersonal sources | 81 | |
| Friend | 76 | |
| All sources | 87 | |

Relatives

The 1,000 patients received advice from 833 relatives. It was found that male relatives usually said "Go to the doctor" without offering practical advice (see Table 5). The predominance of husbands giving advice was due to the fact that about two thirds of the patients in the survey were female and most of these were married women who would be expected to receive advice from husbands.

Wives gave the best advice, mothers-in-law and mothers the worst as shown in Table 6.

TABLE 5
FREQUENCY OF ADVICE GIVEN TO A 1000 PATIENTS BY 833 RELATIVES

| | Husband | Wife | Mother | Sister | Daughter | Mother-in-law | Father | Aunt | Brother | Son | Sister-in-law | Grandmother | Daughter-in-law | Grandfather | Other female | Other male | Total male | Total female |
|--------------------------------|---------|------|--------|--------|----------|---------------|--------|------|---------|-----|---------------|-------------|-----------------|-------------|--------------|------------|------------|--------------|
| Total | 253 | 193 | 176 | 51 | 39 | 37 | 27 | 9 | 8 | 8 | 7 | 6 | 3 | 1 | 6 | 9 | 306 | 527 |
| Total excluding "Go to doctor" | 71 | 99 | 100 | 21 | 13 | 27 | 17 | 8 | 4 | 4 | 4 | 4 | 0 | 1 | 2 | 2 | 99 | 278 |

TABLE 6
SOUNDNESS OF ADVICE GIVEN BY MOST 'POPULAR' RELATIVES

| Relative | Total | Complete | Good | Slightly helpful | Harmless | Harmful | Harmful (%) | Score |
|---------------|-------|----------|------|------------------|----------|---------|-------------|-------|
| Wife | 193 | 11 | 86 | 80 | 10 | 6 | 3.2 | 1.44 |
| Sister | 51 | 3 | 24 | 15 | 8 | 1 | 2.0 | 1.41 |
| Daughter | 39 | 1 | 20 | 13 | 3 | 2 | 5.1 | 1.36 |
| Husband | 253 | 7 | 99 | 121 | 18 | 8 | 3.1 | 1.35 |
| Father | 27 | 2 | 12 | 8 | 5 | 0 | — | 1.33 |
| Mother | 176 | 7 | 77 | 68 | 22 | 5 | 2.8 | 1.30 |
| Mother-in-law | 37 | 1 | 13 | 15 | 6 | 2 | 5.4 | 1.16 |
| Total male | 306 | 9 | 122 | 138 | 25 | 12 | 3.9 | 1.29 |
| Total female | 527 | 22 | 232 | 204 | 52 | 17 | 3.2 | 1.36 |
| Total | 833 | | | | | | | |

Male relatives rarely gave advice to their own sex. The 342 males received advice from 280 females and 26 male relatives, whereas female patients received almost equal advice from the two sexes ($P > 0.01$).










Husbands tended to give advice at a younger age than wives. The husbands' mean age was 38 years (S.D. 10.2 years) whereas the wives' mean age was 45.5 years (S.D. 13 years; $P > 0.01$). Male patients consulted their mothers nearly as often as did female patients as opposed to other relatives who were more frequently consulted by female patients.

It is of interest that in the new part of the town male relatives gave significantly more advice than in the old part of the town ($P > 0.05$).

Impersonal sources of advice

This category included all impersonal sources of advice, and included magazines, books and television. The frequency is shown in Table 7. These impersonal sources gave the

TABLE 7
FREQUENCY OF ADVICE FROM IMPERSONAL SOURCES

| | | |
|-------------------------------|-----|--|
| Women's magazines | 44 |  |
| Home doctor books | 42 |  |
| Newspapers | 26 |  |
| Television | 19 |  |
| Medical or nursing text books | 9 |  |
| Comics | 8 |  |
| Other magazines | 7 |  |
| Lottery tickets | 3 |  |
| Radio | 2 |  |
| Total | 160 | |

least sound advice with a score of 0.81 (see Table 2) with 20 per cent of advice being considered harmful. Most harmful advice came from television (31 per cent) and newspapers (30 per cent) and less from home doctor books (21 per cent) and women's magazines (15 per cent).

Home doctor books tended to be out of date with a mean age of 27.5 years (S.D. 17 years).

TABLE 8
AGE OF HOME DOCTOR BOOK CONSULTED BY 800 PATIENTS

| <i>Age (years)</i> | <i>0-10</i> | <i>11-20</i> | <i>21-30</i> | <i>31-40</i> | <i>41-50</i> | <i>51-60</i> | <i>61-70</i> | <i>80+</i> |
|--------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|------------|
| Number | 86 | 37 | 39 | 53 | 32 | 11 | 8 | 2 |

As expected, impersonal sources were consulted more frequently by female patients (20 per cent) than male patients (ten per cent; $P > 0.01$).

Nurses and other professionals

This group was divided into:

1. Nurses giving professional advice.
2. Nurses giving casual advice.
3. Non-nurses, such as hairdressers, chiropodists and doctors' receptionists.

The score for soundness was high (Table 2), although the percentage of harmful advice (6.7 per cent) was greater than expected. The professional nurse gave better advice than the casual nurse or non-nurse (Table 9). Professional nurses were consulted

TABLE 9
SOUNDNESS OF ADVICE GIVEN BY NURSES

| | <i>Total</i> | <i>Complete</i> | <i>Good</i> | <i>Slightly helpful</i> | <i>Harmless</i> | <i>Harmful</i> | <i>Harmful (%)</i> | <i>Score</i> |
|--------------|--------------|-----------------|-------------|-------------------------|-----------------|----------------|--------------------|--------------|
| Professional | 70 | 10 | 39 | 18 | 3 | 0 | 0 | 1.80 |
| Friend | 56 | 6 | 30 | 13 | 2 | 5 | 8.9 | 1.54 |
| Non-nurse | 38 | 5 | 17 | 9 | 1 | 6 | 15.8 | 1.37 |
| Total | 164 | 21 | 86 | 40 | 6 | 11 | 6.7 | 1.61 |

more frequently by patients of social grades 4 and 5 ($P > 0.05$; Table 10), and, as would be expected, more often when the patient was a child.

TABLE 10
SOCIAL GRADES IN RELATION TO NURSES

| | <i>Total</i> | <i>Professional advice</i> | <i>Casual advice</i> | <i>Total nurses</i> |
|-----------------------|--------------|----------------------------|----------------------|---------------------|
| Social Grades 1, 2, 3 | 666 | 39 | 36 | 75 |
| Social Grades 4, 5 | 334 | 32 | 10 | 42 |

Chemists

Chemists gave advice to 11 per cent of patients and the score for soundness ranked higher than any other group (Table 2). The acceptability was also significantly higher than the mean (Table 3). As expected, they were more likely to recommend medicine than the other groups (Table 11).

TABLE 11
TYPES OF ADVICE GIVEN BY 108 CHEMISTS COMPARED WITH
THAT OF ALL ADVISERS (PERCENTAGES)

| | | |
|----------------|----|--------------|
| Medicine | 73 | (average 29) |
| "Go to doctor" | 14 | (average 44) |
| Other advice | 7 | (average 17) |
| Home remedy | 7 | (average 10) |

Self-treatment

Self-treatment was taken to mean treatment of the patient's own choosing without conscious reference to other people or impersonal sources. It was practised by 52 per cent of patients and used on its own by eight per cent.

Married patients used self-treatment significantly more often than the single ($P > 0.01$; Table 12). Home remedies were used in self-treatment significantly more often than the mean ($P > 0.01$).

TABLE 12
PERCENTAGE SELF-TREATMENT RELATED TO MARRIED STATE

| | |
|-----------|----|
| Married | 54 |
| Single | 38 |
| Widowed | 64 |
| Separated | 58 |

Harmful advice

Harmful advice was taken to be that which did harm to the patient or, in the doctor's view, was potentially harmful.

There were 123 cases of harmful advice, being five per cent of all advice. They fell into four classes:

1. Causing unwarranted or excessive anxiety (60);
2. Leading to incorrect treatment (49);
3. Leading to harmful delay (seven);
4. Incurring unnecessary expense (six).

The type of advice most likely to be harmful was 'other advice' ($P > 0.01$; Table 13).

TABLE 13
HARMFUL ADVICE IN RELATION TO TYPE OF ADVICE

| <i>Advice</i> | <i>Total cases</i> | <i>Number of cases of harmful advice</i> | <i>Percentage</i> |
|----------------|--------------------|--|-------------------|
| Other advice | 378 | 73 | 19.3 |
| Medicine | 894 | 34 | 3.8 |
| Home remedies | 286 | 7 | 2.4 |
| "Go to doctor" | 727 | 4 | 0.6 |
| Total | 2,285 | 118 | 4.0 |

Harmful advice came most commonly from magazines, books, television (20 per cent), friends (seven per cent) and nurses (seven per cent) and least often from chemists (two per cent).

Home remedies

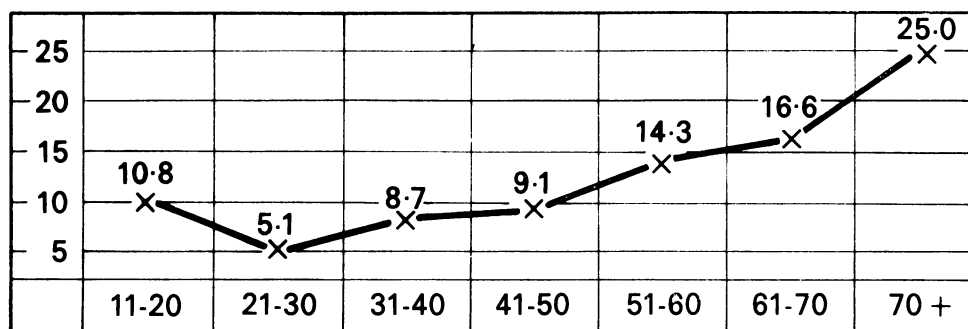
Home remedies were defined as those which traditionally come from the kitchen, household or garden, rather than the chemist's shop. They did not include items such as aspirin and calamine lotion from the store cupboard.

Home remedies accounted for 15 per cent of all advice. Female relatives (ten per cent) advised them more frequently than male relatives (six per cent; $P > 0.05$), while the widowed, and separated, used them more often than the married ($P > 0.05$).

They were recommended progressively more frequently by the older age groups except that teenagers advised them more often than expected (Table 14).

Home remedies were recommended significantly more often by the following: friends, 'other relatives', and also mothers and fathers in comparison with husbands and wives ($P > 0.05$). The acceptance rate was less than for medicine ($P > 0.01$).

TABLE 14
PERCENTAGE OF HOME REMEDIES ADVISED BY DIFFERENT AGE-GROUPS

*Types of disease*

Diseases were classified according to the *Classification of Morbidity* (revised 1963) of the Royal College of General Practitioners. The best advice was given for respiratory complaints and the worst for psychiatric illness. There was also a longer delay before visiting the doctor by those with psychiatric illness.

TABLE 15
SOUNDNESS OF ADVICE GIVEN FOR DIFFERENT DISEASES








| Disease Category | Score | Bar Length |
|--|-------|----------------------|
| Respiratory diseases | 1.53 | ████████████████████ |
| Diseases of bones and organs of movement | 1.44 | ██████████████████ |
| Genito-urinary diseases | 1.27 | ████████████████ |
| Diseases of skin | 1.20 | ██████████████ |
| Diseases of digestive system | 1.20 | ██████████████ |
| Diseases of nervous system and sense organs | 1.13 | ██████████ |
| Mental, psychoneurotic and personality disorders | 0.92 | ██████ |

Discussion and case histories

This survey gives a picture of lay medicine as practised in Northampton today. Does it apply to other parts of the country? Fortunately the P.E.P. report *Family needs and the Social Services* (1961) used Northampton as a control for a survey carried out in various

TABLE 16

PERCENTAGE OF PATIENTS WHO VISITED THEIR DOCTOR WITHIN A WEEK OF THE ONSET OF SYMPTOMS RELATED TO THE TYPE OF DISEASE. THE RESULTS SIGNIFICANTLY DIFFERENT FROM THE MEAN ARE SHOWN IN PARENTHESES (CALCULATED BY Z-SCORE TEST)

| | | | |
|--|--------|-------|--|
| Nervous system and sense organs | (0.01) | 61.0% |  |
| Respiratory system | (0.01) | 59.8% |  |
| Digestive system | | 54.6% |  |
| Genito-urinary system | | 40.5% |  |
| Bone and organs of movement | | 37.9% |  |
| Skin and cellular tissue | (0.05) | 36.0% |  |
| Mental, psychoneurotic and personality disorders | (0.05) | 33.0% |  |

London boroughs. No difference in social attitudes was found except in housing. Also, in the present survey, only minimal differences were noted between patients living in the town and in the surrounding villages.

It must, however, be stressed that the survey dealt only with those illnesses which eventually led the patient to visit the doctor, that is to say about a quarter of the total. It was also dependent on what the patient was able to remember or willing to tell the doctor in a short interview.

The sources of advice were 2.3 for each patient, 1.8 excluding self-treatment. The number of people involved was far greater than this since a single source might be a family at the breakfast table or the staff of an office.

Those who sought advice often might do so because of the nature of the disease, for example acne or obesity, or because of the type of work they did.

Patient 559

A married village shopkeeper had a persistent cough. She received advice from her husband, an ex-matron, a doctor's receptionist and five customers, of whom three recommended 'Golden Syrup', one boiled onion gruel and one the application of a hot brick to the chest.

Those who received no advice formed an interesting group. Of the 122 patients, 73 (60 per cent) showed a likely relevant factor, the most common being widowed (15), modesty about part of body involved (15), domestic discord (11), living alone (11), personality disorder (10), divorced (5). Not receiving advice is probably an abnormal state of affairs.

Patient 887

A middle-aged man, recently widowed, came to the surgery complaining of backache. He had consulted no one because he "had no friends and anyway if I got some ointment there's no one to rub it in".

It is interesting that 96 per cent of patients had received advice or treatment before coming to the surgery. Is it justifiable to call the family doctor the source of primary care?

The best advice came from chemists, who have everyday experience of giving advice but are careful not to exceed their ability. Five chemists agreed that about ten per cent of customers come for advice rather than for a definite product. Often the customer will ask "to see the man". Two patients in the survey complained that "chemists are not what they were", having been served by untrained assistants.

Nurses gave good advice but, especially when giving casual advice, were likely to do harm by frightening the patient. For this reason they had an unexpectedly high score for harmful advice.

Patient 219

A hairdresser of 23, while setting a nurse's hair, felt a little giddy. She mentioned this to the nurse, who said: "You know what that is? Blood pressure!" The hairdresser was worried and made an appointment to see her doctor. The blood pressure was normal but it was difficult to persuade her that the giddiness was probably due to standing in a hot room.

Of the 'non-nursing professionals', six gave harmful advice, namely a herbalist, physical-education instructor, chiropodist, shoe-shop assistant, masseur and dental receptionist.

Patient 133

A man of 69 attended the surgery with a large rodent ulcer of the forehead. He had been visiting a herbalist who had treated him for three years with ointment and 'medicine through the blood stream' at the cost of about £20. His wife and various friends had pressed him to see a doctor and finally a chemist persuaded him to attend the surgery.

Impersonal sources of advice such as books and television not only gave the worst advice overall, but also the greatest proportion of harmful advice. It must however be remembered that the patients in the survey were those who came to the surgery because the previous lay treatment had not been entirely successful. When it did succeed there might be no need to visit the doctor.

Women's magazines show great interest in medical matters—a magazine picked up at random had 17 references to treatment of illness—and on the whole the advice is sound. The following was an exception.

Patient 979

A woman of 61 attended the surgery with lassitude and nervousness. On questioning she produced the following extract from a woman's magazine:

- Q. My eyes have become like slits and I literally have to hold them open to see. Sometimes I'm so tired I can hardly walk. Is this just nerves?
- A. It sounds as if you have a well-known neurological illness that responds to treatment. Do see your doctor at once.

This, of course, is an accurate description of myasthenia gravis but could be misinterpreted by a woman who is so tired she has to 'prop her eyes open'.

Home doctor books are kept long after they are out of date. One patient claimed to use a work written by Aristotle and another a book dated 1894 which she stated had been 'instrumental in saving five lives'. Even in recent books the advice may be misleading and old-fashioned.

Patient 380

A girl correctly diagnosed her skin complaint as scabies. Her home-doctor book recommended 'sulphur and hot baths' but she borrowed some benzoyl benzoate from a friend. Unfortunately the home-doctor book had an illustration of the scabies mite. The patient was having nightmares about large shrimp-like creatures burrowing into the skin. Her anxiety was more difficult to treat than the original scabies.

Newspapers and television scored poorly but the number of patients involved was small. Four patients attended the surgery with anxiety states after reading a single newspaper article about the symptoms of cancer and three patients attended with cancerophobia related to the death of a famous woman athlete. A survey of the effects of these media on health would be of value.

Home remedies accounted for 15 per cent of all advice and were used especially by the elderly and surprisingly, teenagers. This may be because they have little experience of treating illness and listen to tales of elderly parents or grandparents. The list of remedies was a fascinating mixture of such things as lemon, honey, onions and alcohol in various forms and combinations. Magical remedies, such as applying a wedding ring to a sty and raw meat to warts were mentioned and also some quaint customs.

Patient 615

A girl of 31 complained of chilblains. Friends had suggested 'Pernivit' tablets, calcium tablets and 'Snowfire' cream. A neighbour suggested she "sat with her feet in the toilet" and when the doctor queried this he was told the custom "goes back donkey's years".

In the past, medical care has been the prerogative of women and it apparently still is. Male relatives, for example, tended to suggest a visit to the doctor and it was most unusual for a male patient to receive advice from someone of his own sex. Only 29 per cent of advice given by male relatives was of a practical nature, as opposed to 53 per cent from female relatives. Is the fashion changing? There is some evidence that it may be so, since more advice was given by male relatives.

1. At a younger age.
2. In the new part of the town.
3. In the higher social classes (1 and 2).

The higher social classes and younger age groups seem to see the husband in a less traditional role and he is more likely to play a maternal role in medical care.

Conclusion

It is suggested that home medical care plays an essential role in the structure of medical care as a whole and is still responsible for the majority of advice and treatment. It is a neglected subject because it is often supposed to be undesirable in a 'free and comprehensive health service'.

There is no indication, however, that it will become obsolete in the foreseeable future, nor any proof that this would be a desirable trend; in fact it may be an important part of family and community life. A plea is made for sensible and efficient training in home medical care, perhaps at school level, and further investigation into ways in which it might be extended to take away some of the burden of the National Health Service.

Acknowledgements

I wish to thank the members of the M.D. club and staff of the Cripps Postgraduate Centre, Northampton and Dr A. Barr, Mr D. R. Golding and the staff of the Statistics Department of the Oxford Regional Board, as well as Miss Heather Dean, B.A.

Addendum

Further information, in particular the criteria used for classifying the types and soundness of advice, are available from Dr Elliott-Binns.

REFERENCES

- Butterfield, W. J. H. (1968). *Priorities in Medicine*. London: Nuffield Provincial Hospitals Trust.
- Cartwright, A. (1967). *Patients and their doctor*. London: Routledge & Kegan Paul.
- Horder, J. & Horder, E. (1954). *Practitioner* 173, 177-187.
- Jefferys, M., Brotherston, J. H. F. & Cartwright, A. (1960). *British Journal of Preventive Social Medicine*, 14, 64-76.
- Kessel, H. & Shepherd, M. (1963). *Medical Care*, 3, 6-10.
- National Opinion Polls Ltd. (Aspro Nicholas) (1965). *Home Medication*. London.
- Office of Health Economics (1969). *Without Prescription*. London: O.H.E.
- Palmer, W. M. (1911). *Cambridge Doctors*. Cambridge Antiquarian Society.
- P.E.P. Report (1961). *Family needs and the Social Services*. London: Allen & Unwin.
- Wadsworth, M. E. J., Butterfield, W. J. H. & Blaney, R. (1971). *Health and Sickness: the Choice of Treatment*. London: Tavistock Publications.