

Readers' Forum

Medical and professional negligence

Sir – I read with considerable interest the article on medical negligence by Professor Povi Riis followed by the Round Table discussion by experts from different regions of the world (1). Professor Riis and the discussants are to be commended for their handling of this highly complex issue with clarity and with specific examples that add to our understanding of the subject.

The discussion is indeed timely. As health professionals strive for quality of care in the era of health care reform and ever dwindling resources, issues of negligence and malpractice assume even more significance. In fact, the subject is important to all health professionals.

It appears from Professor Riis's article that the intention was to present medical negligence as a subject that refers not only to medical doctors but to any personnel in the health field. However, use of the term "medical negligence" seemed to fail to capture and convey the scope of the discussion. Most, if not all, nurses would refer to negligent acts by nurses as "professional negligence". Thus the term "medical negligence" seems to be too restrictive and a misnomer in the context of the Round Table.

There seems little doubt that a multidisciplinary discussion would have enriched the breadth and scope of the concept of medical negligence as viewed by other health professionals and addressed the issue in a more inclusive way. I believe that the health team should not only work together for common goals and outcomes, but also learn together by discussing key issues and responsibilities through forums, satellite meetings, round tables and other opportunities. I propose that future issues of *World Health Forum*

should open up the discussion on negligence and malpractice in the broader context of professional negligence, and continue it with emphasis on a multidisciplinary perspective. From the nursing profession, nurse ethicists, nurse lawyers and others could present the nursing perspective and add to our ability to communicate with each other.

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1. **Riis P.** Medical negligence. *World health forum*, 1996, **17**: 215–218; discussion 219–239.

Community-based health insurance

Sir – The recent article on community-based health insurance in China presents a successful scheme in Taichang County (1). Muhmud Khan and his associates demonstrate that the model of financing rural health services was effective and sustainable; they therefore conclude that it may be of significance for other rural areas of China and other developing countries. I have doubts about this conclusion.

The scheme in Taichang clearly benefited from its location in a relatively prosperous and thriving economic area. Though the village enterprises only contributed 1% of the costs, 45% of total financial contributions to the scheme were made by village welfare funds, which themselves are derived from "taxation of collective activities and industrial enterprises rather than the agricultural sector". Furthermore, contributions from young workers in rural industry underpinned the risk pooling of the scheme. Thus, as the authors point out, "health insurance programmes are likely to be financially viable if they draw on the thriving rural industrial sector".

The authors are certainly correct to point out also that political support from local government and some form of accountability to the local population are central issues, but it is not clear that, as they argue, economic growth and the presence of rural industry "are not the most crucial factors" in the scheme's success. According to an official of the Department of Health in Jiangsu Province, the models implemented in the southern part of the Province – including Taichang – are difficult to apply in the northern part and in other poor areas of China where the pace of economic development has been relatively slow (2).

The changes in Taichang were undertaken in the context of the rapid economic development of the last decade, which has not yet been observed in most of the inland of China and in other South-East Asian and African countries.

It is widely believed that the economic and social gains in most rural areas in China, such as Taichang, were largely due to the rapid development of village and township enterprises (VTEs). Our nationwide survey of 20 counties found that there was a strong relationship between the level of nonagricultural production per person in a township and the existence of a Cooperative Medical Scheme (3). The reason VTEs are so important is that they pay a proportion of their profits into the local welfare funds. In poor areas, a weak collective economy – partly because of implementation of the household responsibility system since the economic reforms and partly because of the lack of local government revenue from VTEs – would be unable to provide village welfare schemes with the necessary strong financial support.

In the late 1970s more than 90% of villages were covered by various Cooperative Medical Schemes, but this figure dropped dramatically to a record low of 4.8% in 1986 (4). Following a decade of efforts by local governments, especially at the county and township levels, with explicit encouragement from central

government, coverage increased very slightly to 7% in 1994. Such a result tells us that looking for a model of financing rural health services which can be acceptable and feasible for other parts of China, or the developing world as a whole, is not easy. Political backing for the development of a scheme is necessary, as has been demonstrated, but not sufficient. Financial support from the state or the collective economy may well be vital, especially in poor areas.

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1. **Mahmud Khan M, Zhu N, Ling JC.** Community-based health insurance in China: bending to the wind of change. *World health forum*, 1996, **17**: 58–62.
2. **Ying D.** 1993 (personal communication).
3. **Tang SL et al.** *Financing health services in China: adapting to the economic reform*. Brighton, Institute of Development Studies, 1994, (Research Report 26).
4. *Selected edition of health statistics of China, 1976–1990*. Beijing, Ministry of Public Health, 1991.

Difficulties of putting dietary changes into practice

Sir – The article by José Gutiérrez Fuentes is timely, because it underlines the extent of dietary changes required for the prevention or control of coronary heart disease (1). Briefly, current guidelines urge that one should eat less, eat less fat (especially saturated fat), and eat much more food of plant origin, particularly vegetables and fruit. Understandably, the beneficial effects of such recommendations help to control other degenerative diseases, including diet-related cancers.

It must be faced that changes provoked over the two decades since the inception of general dietary guidelines (2) have been very disappointing. In regard to decreasing total energy intake – an injunction certainly of

relevance to all developed populations as well as to the prosperous among urban developing populations – the responses have been negligible. Indeed, as a marker, the prevalence of obesity has been increasing significantly in all populations worldwide.

Fat intake has fallen only slightly. In the USA nowadays, fat and saturated fat intakes supply 36.5%–38.1% and 13.0%–14.1% of energy, respectively (3). These figures are still too high, as the recommended proportions are <30% and <10%, respectively. It is interesting to note that, in a survey of women aged 30–60 years in Denmark, all age groups expressed satisfaction with their diets, in spite of high levels of fat intake reported in Danish population surveys (4). As to plant foods, consumption of bread and legumes has not increased in the USA; nor, despite active encouragement, are more vegetables and fruit being eaten (5).

Why have responses been minimal in the face of evidence that is so convincing? Probably the primary reason is human conservativeness, compounded by the attractiveness of present-day food. Another reason is that advertisements for food are hardly supportive of dietary changes. An analysis of the type of information given in children's Saturday morning television programmes in the USA deemed 41% of the messages to be the very antithesis of healthy eating for children (6).

A further disincentive to dietary change was revealed by a survey made of a large number of US medical practitioners about the factors they considered to be "very important" to health promotion and maintenance. Only half of them thought diet worth ranking in this classification (7). Indeed, there was evidence that physicians are now less attentive to their patients' diets than in the past; the physicians attributed this in part to the lack of valid and consistent data to support many official dietary recommendations.

Not the least of the reasons for the disappointing response is the enormity of the

changes required. For example, the recent School Nutrition Dietary Assessment Study in the USA found that one way of reaching the reduced fat intake target would be "to amend the school lunch by reducing the average meat serving from 2 oz (56 g) to 1.5 oz (42 g), eliminating high fat meals, high fat cheese, nuts, and nut butters; eliminating high fat and milk-based desserts; and reducing sharply the use of added fats in food preparation" (8). Only 1% of the school lunches assessed complied with these criteria. How will schoolchildren – the most important targets for dietary change – react to these well-meaning but radical measures? No doubt with alarm and distaste.

So what do we do? As Gutiérrez Fuentes has emphasized, the message is clear. Strong encouragement to make changes must continue, for compliance by even a small proportion of the population could prevent or defer the onset of disease in many. Undoubtedly, more intensive endeavours must be made to reach those at familial risk, as well as those who have excessively high risk factors which are amenable to correction.

In Africa, attempts to advise the better-off in urban developing populations to adopt a "prudent" lifestyle would seem almost a non-starter. The majority of urban Africans in South Africa have the intense desire to attain the present lifestyle of the white population, among whom, alas, many practices – dietary and non-dietary – are the converse of those needed for healthy living.

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1. **Gutiérrez Fuentes JA.** What food for the heart? *World health forum*, 1996, **17**: 157–163.
2. *Dietary goals for the United States.* Washington DC, Select Committee on Nutrition and Human Needs, US Senate, 1977.

3. **Ganji V, Betts N.** Fat, cholesterol, fiber and sodium intakes of US population: evaluation of diets reported in 1987–88 Nationwide Food Consumption Survey. *European journal of clinical nutrition*, 1995, **49**: 915–920.
4. **Devine CM, Sandström B.** Danish women's attitude and beliefs about dietary fat: age group differences. *Scandinavian journal of nutrition*, 1995, **39**: 98–102.
5. **Patterson BH, Block G.** Improving the *American diet*. *American journal of public health*, 1992, **82**: 465–466.
6. **Kotz K, Story M.** Food advertisements during children's Saturday morning television programming: are they consistent with dietary recommendations? *Journal of the American Dietetic Association*, 1994, **94**: 1296–1300.
7. **Wechsler H et al.** The physician's role in health promotions revisited – a survey of primary care practitioners. *New England journal of medicine*, 1996, **334**: 996–998.
8. **Burghardt JA, Devaney B, Gordon AR.** The School Nutrition Dietary Assessment Study: summary and discussion. *American journal of clinical nutrition*, 1995, **61** (Suppl): 252S–257S.

Rapid appraisal before impact evaluation studies

Sir – I read with interest Dr Blecher's recent contribution about indicators for the management and evaluation of programmes or services, and I agree with his conclusion that "only outcome and impact indicators are able to show whether the whole system actually worked to achieve the desired improvements in health" (1). He provides a simple example – measles admissions to a sentinel site hospital – as an indicator of immunization programme effectiveness. A search of a database such as Medline will reveal that impact evaluations in the health field are rare, perhaps because it is usually a much more complex and expensive task than Blecher implies.

Rapid appraisal procedures may be used to decide whether investment in any more complex designs is likely to be justified. The following example describes a preliminary assessment of the impact of a three-year

campaign by the Worldview International Foundation's Nutritional Blindness Prevention Programme (NBPP). The programme's aim was to increase consumption of vitamin A-rich foods throughout several low-income districts in northern Bangladesh. Dietary improvement messages were conveyed through traditional media such as singers who visited all the villages; modern media such as radio, television and cinemas; and various other activities such as the showing of a traditional melodramatic comedy film, school gardening projects, messages from health workers, and the deployment of women volunteers who were trained to provide mothers with messages and assistance in home gardening.

If the programme had actually increased dietary intakes of foods rich in vitamin A, then sales of the foods promoted should have increased; if it had resulted in increased home gardening, then sales of specific seeds should have increased above seeds of other commonly grown foods. Focused interviews, rapid and informal, were held with vegetable and seed salesmen in four towns where the programme had been implemented in previous years (Dinajpur, Gaibandah, Lalmunirhat and Rangpur) and in Saidpur which is close to several programme areas. One seed merchant and two vegetable sellers were interviewed in one or two market areas in each town. The interviewer was unknown to them and was introduced by the translator as someone who was interested in how the vegetable market was developing; only two respondents knew who the translator was. This rapid appraisal was conducted in the context of a broader assessment which required a two-week trip around northern Bangladesh: the data gathering took about two hours on five days, and a little additional time was needed for analysis.

There was very little variation in response to the main questions, as follows.

- How has the market been changing in recent years?
 - Vegetable sales have gone up rapidly.

- Why do you think this has happened?
 - Because of increased population (50%) and increased awareness of nutrition or vitamin A (50%).
- For which types of vegetables are sales increasing rapidly?
 - Green leafy vegetables, specially red amaranth, local spinach, and kang kong; sometimes also pumpkin, squash, radish or carrots.
- For which types of vegetables are sales constant or increasing less rapidly?
 - Cabbage, cauliflower, rutabagas, onions (none of these is rich in carotene or is promoted by the NBPP).
- Why do you think sales increased for some kinds of vegetable and not others?
 - It must be that people are more aware of the importance of vitamin A or of good nutrition.
- What has made people aware of this?
 - After general mention of government propaganda or nongovernmental organizations, all salesmen eventually mentioned the NBPP or some of its activities. Villagers usually remembered the traditional singers and a few quoted from their messages. City-dwellers mentioned media messages: some smilingly recalled the film. All the respondents were men and only some of the rural inhabitants were aware of women volunteers, but a few could even name one.

The results of this preliminary survey were considered adequate indication that investment in a large-scale impact evaluation of the final year of the project was justified. This was carried out by two interview studies at a year's interval with large samples and a comparable control group (2). The proportion of young children consuming green leafy vegetables was found to have increased substantially compared with the controls. Perhaps because of its large scale the cost of this project was only US\$ 0.13 per capita per year, substantially less than that reported for other successful diet-change projects.

The point I wish to make from this nutritional example is that outcome or impact evaluations are quite expensive to conduct. Investing in them will be a waste of resources unless there is an indication by simpler methods that there has been an effect. If the use of rapid appraisal indicates that there has apparently been no effect, this does not mean that no study should be done to determine the reason for this. In most cases, however, simple review of process or outcome indicators will reveal failures at those levels at much lower cost.

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1. **Blecher M.** Use of indicators in health care management. *World health forum*, 1996, **17**: 287.
2. **Greiner T, Mitra SN.** Evaluation of the impact of a food-based approach to solving vitamin A deficiency in Bangladesh. *Food and nutrition bulletin*, 1995, **16**: 193–205.

Underutilization of maternal health services

Sir – High maternal mortality in developing countries is often attributed to inadequate maternal and child health services, especially in rural areas. Attention has been drawn to the neglect of the maternal component in such services (1). In Punjab, a north-western state of India with the highest per capita income, we have a reasonably good health care infrastructure and a favourable doctor–population ratio, yet maternal mortality remains high. In a population-based survey conducted recently, we observed an overall maternal mortality rate of 319 per 100 000 live births (2). It is possible that underutilization of existing health services is a contributing factor.

During our large population-based maternal mortality study we addressed the question of existing health services and their utilization by studying a subset of six urban colonies and

eight villages. The areas were selected according to the existing maternal and child health facilities, quality of antenatal care, pregnancy-related morbidity, place of delivery, and final outcome. House-to-house interviews were conducted in the native Punjabi language by medical graduates assisted by paramedical field workers. The sample covered a total population of 20 530, with 660 pregnant women at different states of gestation at the time of entry into the study: 369 in rural areas and 291 in urban localities. The pregnancies were monitored and antenatal advice was given during periodic house visits. All the women were followed until delivery and for six weeks afterwards.

In spite of the easy availability of free medical services at the nearby primary health centre within 5 km and our own tertiary care facility within 17 km, it was found that only 12.2% of rural and 34% of urban pregnant women took advantage of the care offered to them. Even though we did our best to motivate them, 32% of the women ignored our referral advice. Most of the women (77% rural and 43% urban dwellers) still preferred home deliveries conducted by untrained traditional birth attendants. Owing to lack of care during the antenatal period and during child-birth, there was high maternal morbidity (43%) and one maternal death. On reinterview, the main reasons given for non-compliance with our advice were poverty, lack of adequate transport, inability to leave household responsibilities, social taboos, and fear of hospitals and unfamiliar medical personnel. Illiteracy was the greatest hurdle to the utilization of existing health facilities. Women with high-school education had the most hospital deliveries (79%) while only 10% of women who had never attended school were delivered in hospital.

In addition to the gross underutilization of existing health facilities revealed by our study, another major problem was the absent rural doctor, who resides in the nearby town instead of his place of posting, emphasizing the social distance separating him from his

patients. He is not available in an emergency when he is off duty, and he fails to gain the trust and confidence of the village population.

While it is desirable to provide essential obstetric services at the primary health centre level, it is even more urgent to evolve strategies so that better use is made of the existing health services. Doctors and paramedical staff should be given incentives such as good local accommodation, in order to encourage a better rapport with the local community. Transport is another factor that needs to be taken care of: the innovative "obstetric flying squad" has been tried with success in Faisalabad, Pakistan (3).

The long-term solution to the underutilization of maternal and child health services lies in improving the socioeconomic status of women, eradicating illiteracy and promoting gender equality.

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1. **Rosenfield A, Maine D.** Maternal mortality – a neglected tragedy: where is the M in MCH? *Lancet*, 1985, **2**: 83–85.
2. **Sarin AR.** Maternal mortality – the Punjab perspective. In: *Proceedings of the IXth Indian Conference on Family Welfare and Voluntary Sterilization, Ahmedabad*. Calcutta, CS Dawn on behalf of the National Association for Voluntary Sterilization and Family Welfare, 1993: 46–51.
3. **Bashir A.** Working to reduce maternal mortality. *World health forum*. 1990, **11**: 427.

Baby-friendly hospitals in Kerala

Sir – As State Coordinators of the Baby-Friendly Hospital Initiative in Kerala, India, we should like to share with readers the progress we have made in promoting breast-feeding in the state. Kerala has a population of about 29 million; the literacy rate is the highest in India

and the people are very health conscious. Most of the babies in the rural areas are breast-fed but the prevalence of bottle-feeding is very high in the urban areas, especially among the middle and upper classes, and this trend has been spreading.

The Initiative was launched in Kerala State in 1993, with the support of UNICEF. The administrators, doctors and nurses of 55 hospitals (both government and private) were given training in lactation management and programme implementation. Thanks to their enthusiastic response, 38 hospitals were declared to be Baby-Friendly Hospitals by the end of the first year of operation. The following year, 15 of these were identified as resource hospitals to help others in implementing the programme. They were thus able to convert a further 157 into Baby-Friendly Hospitals.

The outstanding achievement was in the city of Cochin, where all 41 hospitals participated in the Initiative and have achieved baby-friendly status. In presenting the state awards to the 157 hospitals in April 1995, Dr John Rhode, chief executive of UNICEF in India, declared Cochin to be the first Baby-Friendly City in the world.

Building on our success to date, we now aim to promote the message of exclusive breast-feeding through all the maternity hospitals in Kerala. Fourteen district coordinators have been identified, and 410 hospitals have been declared to be baby-friendly – the largest number in any Indian State.

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Fluoride content of drinking-water and beverages in Jordan

Sir – We have studied the fluoride content of drinking-water and commercially available beverages in Jordan. Over 200 samples of drinking-water were collected from various areas, the water being allowed to flow from the tap for 1–2 minutes before collection in plastic bottles. The tested beverages comprised 20 items including bottled mineral water, carbonated drinks, and fruit juices. The fluoride concentrations in water and beverages were determined by analysis which we have reported elsewhere (1).

The fluoride contained in drinking-water is the largest single contributor to a daily fluoride intake, especially when the water is fluoridated. The fluoride intake from drinking-water will depend upon not only its fluoride concentration but also climatic conditions, the age of the person, and dietary habits. For infants and young children, powdered milk formulas and beverages are the main sources of fluoride when they are processed or prepared with fluoridated water (2,3).

Analysis of water supplying 11 provinces and Jordan valley showed considerable variation in fluoride concentrations from 0.10 to 2.15 ppm (1 ppm = 1 mg/litre). The highest fluoride level was registered in Aqaba, a port city for the phosphate industry. Data from the Meteorological Department showed that the air temperature ranged from 30.2°C in Aqaba in the south to 18.2°C in the northwest province of Ajloun. Optimum fluoride concentrations in drinking-water in Jordan have been calculated at 0.7–0.9 ppm. Accordingly, the community water supply in Jordan appeared to be deficient in fluoride in all except 12 localities (5.5% of the tested samples).

The fluoride concentration of bottled water ranged between 0.08 and 0.23 ppm. It thus appears that the use of bottled water for

mixing infant formulas would contribute less to the daily fluoride intake than drinking-water. The fluoride content of carbonated drinks and fruit juices varied between 0.16 and 0.67 ppm, reflecting that of the water used in their production.

Our preliminary observations revealed the occurrence of dental fluorosis among individuals residing in areas with approximately 1 ppm fluoride in drinking-water; incidence and severity increased at higher fluoride levels. Interviews with children in areas of endemic fluorosis disclosed that the use of toothbrushes was uncommon and that the vast majority of the children had never received fluoride supplements or topical fluoride therapy. This may indicate that drinking-water is the principal source of ingested fluoride in Jordanian children. The other important source of systemic fluoride intake is fluoride-containing phosphate dust ejected from phosphate mining, the largest industry in Jordan. Similar findings have been observed in Morocco (4).

These and other findings indicate that optimum fluoride levels set primarily for Europe and North America may not be appropriate for all geographic regions. Available information supports the reduction of fluoride in drinking-water to a level of 0.5–1.0 ppm, as recommended by a WHO Expert Committee (5). Sources of fluoride other than community water supplies should be identified and dietary habits should be evaluated; in addition, data on airborne fluoride and the community fluorosis index are needed before the optimum level of fluoride in Jordan can be accurately assessed. We believe that each country should make its own assessment of the desirable concentration of fluoride in its water supplies according to its circumstances.

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1. **Hattab FN, Wei SHY.** Dietary sources of fluoride for infants and children in Hong Kong. *Pediatric dentistry*, 1988, **10**: 13–18.
2. **Wei SHY, Hattab FN.** Water fluoridation, systemic fluorides and fluoride metabolism. In: **Wei SHY** (ed). *Pediatric dentistry: total patient care*. Philadelphia, Lea & Fibinger, 1988: 57–79.
3. **Burt BA.** The changing pattern of systemic fluoride intake. *Journal of dental research*, 1992, **71**: 1228–1237.
4. **Haikel Y, Voegel JC, Frank RM.** Fluoride content of water, dust, soils and cereals in the endemic fluorosis area of Khouribga, Morocco. *Archives of oral biology*, 1986, **31**: 279–286.
5. *Fluorides and oral health. Report of a WHO Expert Committee on Oral Health Status and Fluoride Use.* Geneva, World Health Organization, 1994 (WHO Technical Report Series, No. 846).

Drug delivery and health workers' behaviour

Sir – The introduction in Ghana in January 1992 of a “cash and carry” system for the distribution of drugs through a user-financed revolving fund has resulted in an improved supply at health care facilities. The aim of the system is to establish and sustain an essential drug supply at all public health facilities at affordable prices. We interviewed health workers and selected opinion leaders in three districts to ascertain the impact of the scheme on the behaviour of health workers. In addition, focus group discussions were used to collect data from rural and urban health care facilities.

Both health care providers and users of facilities were pleased with the increased availability of drugs. Some doctors and nurses said that it had raised their morale, and patients generally considered that drugs at health centres were safer and less expensive. Shortages sometimes occurred, especially in

urban centres where demand was high. These shortages were attributed to inadequate inventory control rather than to a weakness in the national drug supply system. Some older people, in particular, were discontented when they had to buy some of their drugs elsewhere, specially those for age-related conditions such as hypertension, impotence and blindness.

Payment was mainly in cash, though credit facilities were available in rural areas. When the patient could not pay for a full course of treatment a compromise was reached: the most urgent drugs were provided first with the option to buy the rest later, or prescribed quantities were reduced. Both these solutions had a negative impact on the treatment. Health care workers were exempt from paying for drugs, either directly or through a refund system. Very poor people, if they could be identified, sometimes received free drugs, but such distribution was kept to a minimum in order not to deplete the revolving fund. In a few cases apparently well-off people were charged a higher price than others.

For some medical officers, medical assistants and health superintendents, the introduction of the cash and carry system has had no impact on their prescribing habits because their prescriptions have always been guided by the effectiveness of therapy and not by the cost of the drugs. For others, some modifications have been noted: a decrease in the quantity and variety of drugs prescribed; the relating of drug choice to the patient's financial situation; and omission of less important items (eg vitamins) if it was clear that the patient could not afford to pay the bill. On the other hand, some prescribers – mostly those who were also chief administrators of the health care facilities – tended to prescribe more drugs than necessary in order to increase drug sales.

The attitude of health care workers is an important factor in the choice of health care. Some patients complained that the impersonal

nature of orthodox health workers aggravated their symptoms, and they preferred the personal attention of fetish priests. The introduction of the drug cash and carry scheme was found to have had a positive impact on the attitudes of health care workers in rural areas but a negative one in towns. Rural patients reported that credit facilities for drugs were often made available to them but they did not attribute the more agreeable attitudes of the prescribers directly to the new system. In urban facilities, health care seekers had better impressions of medical assistants than of doctors, whom they reported as impatient, working shorter hours and collecting illegal consultation fees. Investigation showed this seeming impatience to be partly due to administrative duties and to an increase in the patient–doctor ratio.

Although nurses considered the new system to have had a positive impact on their attitudes to patients, patients and nurses still accused each other of being disrespectful and rude (with very few exceptions). Friendly nurses were more likely to be found in rural areas, where the introduction of user fees had reinforced their behaviour. Dispensary staff stressed that their attitude had changed since the introduction of the system: they now took the time to explain dosages and often suggested cheaper brands.

The cost-recovery programme has improved drug availability but the behaviour of health workers in response to it has been mixed. Overprescription of drugs (from motives of profit) and underprescription (out of sympathy towards patients with difficulty in paying) do not augur well for effective health care delivery. Only optimum use of drugs ensures effective treatment of diseases. The drug cash and carry system would be more efficient with the introduction of a social insurance scheme and a proper identification of paupers.

The burden on health workers could be reduced by increasing their numbers, improving their conditions of work, and

providing opportunities for them to learn about human behaviour and interaction in addition to their traditional health curriculum. The qualitative information from our study could be combined with quantitative data to adjust the cash and carry system to make it more effective.

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Hormones and heart disease

Because of the consistency of the findings from... observational studies, and because of the strength of the apparent association between hormone replacement therapy (HRT) and the reduction in the coronary heart disease risk, HRT is commonly recommended for indications other than the primary one of controlling menopausal symptomatology. As the age distributions of the populations of the industrialized countries shift towards the older age groups, the public health implications of the consequences of cardiovascular disease for women will become of greater importance and will thus increase the pressure for generalizing the use of HRT. In addition, the evidence that the use of non-contraceptive hormones reduces the risk of osteoporosis, and therefore of osteoporotic fractures, is a further incentive for the prescription of HRT.

- *Cardiovascular disease risk factors: new areas for research. Report of a WHO Scientific Group. Geneva, World Health Organization, 1994: p. 27 (WHO Technical Report Series, No. 841).*