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Private practitioners and their role in the resurgence of malaria in *Mumbai* (Bombay) and *Navi Mumbai* (New Bombay), India: serving the affected or aiding an epidemic?

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Abstract

The increased emphasis on privatization of the health care sector in many developing countries by international financial institutions and national governments expects an expanding role for private health care practitioners in the management of major communicable diseases such as tuberculosis, malaria, acute respiratory infections (ARIs) and sexually transmitted diseases (STDs). Largely unexamined in the Indian context, however, is the socio-cultural context, the micro-level political environment in which private practitioners carry out their activities, and the quality of care they provide to their patients. Examining these aspects is significant given the impressive growth of the country's private health sector during the past decade. This paper reports the results of an ethnographic study carried out in *Mumbai* (Bombay) and *Navi Mumbai* (New Bombay), India on private general practitioners (GPs) and their role in the management of malaria at a time when these two neighboring cities were in the midst of the worst malaria epidemic in over 60 years. Described are the characteristics of a sample of 48 private practitioners from the two cities, and their clinics. This is followed by a discussion of the data gathered through unstructured interviews with practitioners and patients, and complemented by observational data on doctor-patient encounters gathered at 16 clinics over a 9-month period. The findings of the study suggest that many practitioners in *Mumbai* and *Navi Mumbai* were poorly qualified and did not play a supportive role in the two cities' public health departments to bring the epidemic under control. The majority of the practitioners adopted diagnostic and treatment practices that were not consistent with the guidelines laid down by WHO and India's National Malaria Eradication Programme. Very few practitioners, especially those practicing in low-income areas, relied on a peripheral blood-smear test to make a diagnosis. Practitioners whose clientele was mostly the poor commonly resorted to giving one-day treatment to febrile patients that included injectable antimalarials and broad spectrum antibiotics. Such practitioners justified their mode of diagnosis and treatment by asserting that they were only responding to the demands placed on them by their patients who could not afford a blood-smear test or a full prescription. The paper argues that practitioners who acquiesced to patient demands were at once exacerbating the health problems of their patients and jeopardizing the prospects for the epidemic to be brought under control. Driven primarily by the need to retain the patronage of patients and maintain one's popularity in a highly competitive health arena, many providers practiced medicine that was unethical and dangerous. The paper concludes by discussing the ramifications of this study for malaria control in *Mumbai* and *Navi Mumbai*, and highlights a few salient health policy issues concerning the growth of the private health sector in India and its regulation. © 2001 Published by Elsevier Science Ltd.

Keywords: Urban malaria; Malaria therapy; Private practitioners; Private health sector; Regulation; Consumer Protection Act; India

Introduction

Since the mid-1980s, there has been much debate about the role of the private health care sector, and especially of for-profit private health care providers, in the management of communicable diseases like tuberculosis, malaria, sexually transmitted diseases (STDs), and acute respiratory infections (ARIs) (Brugha & Zwi, 1998; Thaver, Harpman, McPake & Garner, 1998; Swan & Zwi, 1997; Aljunid, 1995; WHO, 1994; Garner & Thaver, 1993; World Bank, 1993; Uplekar & Rangan, 1993; van der Veen, 1987). While health policy researchers have now affirmed that in many developing countries the private sector is a major player in the health care delivery system, access to reliable data on the size, composition and behavior of the private health care sector is limited (Hanson & Berman, 1998; Newbrander & Moser, 1997a; Rosenthal & Newbrander, 1997; Berman & Rose, 1996). For this reason, there have been increasing calls for more detailed research on the private health care sector, and in particular about private practitioners and their role in providing primary care (Bennett, McPake & Mills, 1997; McPake, 1997; Mills, Bennett & McPake, 1997; Berman, 1997; Bennett, Dakpallah, Garner, Gilson, Nittayaramphong & Zwi, 1994).

In India, the size of the private health care sector,¹ in terms of its sphere of influence and coverage, is enormous (cf. Bhat, 1999; Baru, 1998; Berman, 1997, 1998; Berman & Khan, 1993; Dave, 1992; Jessani & Anantharam, 1989). In the past decade, studies have shown that many patients, regardless of their social class or their place of residence (rural or urban), commonly resort to private practitioners for treatment of minor and life threatening ailments. It is estimated that between 60 and 86% of those in need of ambulatory care in both rural and urban areas resort to private health facilities (cf. Nandraj, Khot & Menon, 1999; Uplekar, Juvekar, Morankar, Rangan & Nunn, 1998; Uplekar & Shepard, 1991; Vishwanathan & Rohde, 1990; Duggal & Amin, 1989).

Notwithstanding the push from international financial institutions such as the World Bank and the International Monetary Fund (IMF) for increased privatization of the health sector, health researchers and consumer activists in India have remained critical of the growth of the private health care sector (Baru & Jessani, 2000).² It

has been argued, for example, that for-profit private practitioners make matters worse for the sick and suffering by engaging in irrational therapeutics, overprescription, and unnecessary investigation and surgery; and that in spite of the excesses committed by private practitioners and private health care institutions, their activities remain unregulated (Jessani, Singhi & Prakash, 1997; Jessani, 1997; Nandraj, 1994; Yesudian, 1994). While researchers in India have examined the role of private practitioners in relation to the management of tuberculosis, leprosy and diarrhea (cf. Uplekar et al., 1998; Uplekar & Rangan, 1993; Uplekar & Cash, 1991; Vishwanathan & Rhode, 1990), very little is known about practitioners and their role in the management of malaria.

On the global level, malaria researchers have expressed serious concern over the inappropriate prescription habits of private practitioners (e.g. polyprescription/overprescription, sub-optimal dosages) and the possible linkages of such practices to antimalarial drug resistance (Garg, Nagnur, Potkar & Kshirsager, 1995; Foster, 1991, 1992; Breman & Campbell, 1988). However, very few researchers, public health specialists, malariologists, and planners of chemotherapy have taken concrete steps to address the problem (Snow, Peshu, Forster, Mwenesi & Marsh, 1992). While the literature has emphasized that private practitioners treat large numbers of fever cases in developing countries, data supporting this assertion are limited and lack generalizability (McCombie, 1996).

This paper examines the role of for-profit private general practitioners (hereafter practitioners) in the management of malaria in *Mumbai* (Bombay) and *Navi Mumbai* (New Bombay) on the West coast of India, at a time when these two neighboring cities were experiencing their worst epidemic in over 60 years (1995–1996). Quantitative and qualitative data gathered over 9 months in the two cities are presented and discussed. A profile of 48 practitioners recruited for the study is presented along with a description of their clinics. This is followed by a discussion of the data gathered through unstructured interviews with practitioners and informal interviews with patients. These data are

Footnote continued

this direction was taken in 1986 when private medical practice in the country was brought under COPRA. The Indian Medical Association (IMA) promptly challenged the Court's decision. However, in November 1995, the Supreme Court of India rejected the 1993 appeal of the IMA and upheld the previous verdict, ruling that doctors in India may be sued for malpractice and medical negligence in consumer courts (for details see Bal, 1997; Bhat, 1996a; 1996b; Khare, 1996; Ganapathi, 1995; Khan, 1995; Menezes, 1995; TOI, 1995). Whether the enactment of COPRA has really made a difference in the quality of care provided by practitioners, the level of patient's satisfaction and clinical outcome is an empirical question that has barely been systematically examined (see Bhat, 1999).

¹For a discussion on the distinction between the for-profit and the not-for-profit private health sector, see Nandraj et al. (1999), Baru (1998), Berman (1997), Bhat (1996b).

²In the mid-1980s, consumer activist organizations brought several cases of medical negligence on part of private for-profit health care providers to the government's attention. In response, the Government of India took steps to regulate the excesses of the private health sector. The most concrete step in

complemented by observational data on doctor–patient encounters gathered at 16 practitioner clinics.

The study

Fieldwork for the study was conducted in *Mumbai* and *Navi Mumbai* from September 1995 to June 1996. The primary objective of the study was to document a group profile of practitioners and to examine their role in the management of malaria during an epidemic situation. The study was timely given the epidemiological and political environment at the time. A series of malaria epidemics were recorded in both rural and urban areas of India. The Government of India (GOI) responded to the crisis by setting up an Expert Committee on Malaria in December 1994. Pilot research for the present study, from August to November 1994, also coincided with the plague epidemic in Surat (September 1994), which had severe ramifications for the residents of *Mumbai* (Kamat, 2000a,b).

Mumbai and *Navi Mumbai* offered excellent research sites for the study. Beginning in 1992, both cities witnessed an unprecedented level of malaria resurgence. The number of malaria cases diagnosed and treated by *Mumbai's* malaria surveillance department increased from 5335 in 1991 to 24,074 in 1995. In *Navi Mumbai*, the number of cases also consistently increased over the years — from 2696 in 1991 to 3830 in 1995. More significantly, *P. falciparum* cases, which were almost negligible until recently, now accounted for more than half of the number of cases diagnosed and treated by the malaria surveillance system. These surveillance figures did not include the manifold number of fever cases that went undiagnosed or unreported due to diagnosis/treatment by private medical practitioners and/or pharmacists. Although the two cities were close neighbors with considerable population movement between them, there were significant differences in their respective pluralistic health care systems and the anti-malaria strategies adopted by the municipalities (described below).

Research setting

Mumbai

Mumbai is India's commercial and financial center. Financial institutions in the city control 12% of the national deposits and a quarter of the nation's credits. The city contributes 25% of the income tax and 60% of the customs revenues collected annually (Patel, 1995). Metropolitan *Mumbai* has an area of 603 km². It is one of the largest and most densely populated cities in the world (Population: 12,571,720 in 1991). For adminis-

trative purposes, the *Brihan Mumbai Nagar Palika* (Municipal Corporation of Greater Bombay — hereafter MCGB) has divided the city into 16 administrative wards, each of which is denoted by a letter. Owing to its reputation for cosmopolitanism and as representative of India's aspirations for the future, the city has been depicted as a “metaphor for modern India” and alternately as a “mosaic of modern culture” (see Patel and Thorner 1995a,b). Meanwhile, the city has also been characterized as an archetype of social segregation, homogenization of elite areas, and disparities in landscape and lifestyles (cf. Ramasubban & Crook, 1995; Harris, 1995). This is because, while *Mumbai* is home to some of the country's wealthiest people, over 5 million people occupy approx. 8% of the city's land. Nearly 50% of *Mumbai's* population lives in slums (*zopadpattis*) and on the streets. About 90 landlords own 55% of the vacant privately owned land (Patel, 1995, p. xxii). The demographic pressure on the city has been tremendous. Parts of the inner city have nearly half a million persons per square km.

Mumbai has an elaborate network of public health facilities — six teaching hospitals, two of which are state-owned; dispensaries operated by the Central Government for its employees; and dispensaries and hospitals operated by entities such as the Bombay Port Trust (BPT), Indian Railways, and the Ministry of Defense. There are 16 peripheral hospitals, 26 maternity homes, 159 dispensaries and 176 health posts (set up under the World Bank financed India Population Project V) operated by the MCGB. These facilities exist alongside an equally impressive network of private hospitals, nursing homes, polyclinics, dispensaries, pathology and diagnostic laboratories, blood banks, pharmacies and private practitioners. Private hospitals or nursing homes run by individuals, co-operatives, corporate bodies, religious bodies and charitable trusts number more than 1157 units (for details see Nandraj et al., 1999, pp. 19–20). However, coordination between the public and private health sector is poor. For example, while practitioners do refer some of their patients to municipal hospitals, they rarely forward information regarding the malaria, TB and STD patients they have treated to local municipal health authorities who are constantly in need of accurate public health intelligence. MCGB's anti-malaria operations in *Mumbai* involve the active collaboration of the pest control/insecticides department and the malaria surveillance department, backed by time-tested legislative measures aimed at preventing productive breeding sites for *A. stephensi*, the principal malaria vector (Deobhanekar, 1986; Covell, 1928). In 1995–1996, the malaria surveillance department had 177 Malaria Inspectors, 299 Malaria Investigators and 40 laboratory technicians. In 1995, the MCGB consolidated its trained laboratory personnel to three from seven municipal laboratories, in

order to expedite blood smear analysis and subsequent follow-up.

Navi Mumbai

Navi Mumbai (Population: 600,000 in 1996, projected to reach 2 million by the year 2200) is a 344 km² city located on the mainland across the *Mumbai* harbor. In 1992, the completion of a rail link (Mankhurd–Belapur section) accelerated population mobility between the two cities. *Navi Mumbai* was originally designed in 1971 and developed by the City and Industrial Development Corporation (CIDCO), a planning organization formed specifically for this purpose. *Navi Mumbai* was built to redirect the population from an overpopulated *Mumbai*. The *Navi Mumbai Mahanagar Palika* (New Bombay Municipal Corporation — hereafter NMMC), constituted in 1992, has administrative jurisdiction over an area of 175 km², comprised of planned townships (locally designated as “nodes”), villages and slums. Approximately 50% of the people in *New Bombay* live in planned townships, 30% in villages and 20% in slums. The NMMC has divided the land under its administrative jurisdiction into seven administrative wards: Belapur, Nerul, Turbhe, Vashi, Koperkhairane, Airoli and Dighe. Several traditional fishing villages, originally inhabited by *kolis* (fisherfolk) and *agris* (traditional salt-makers), coexist alongside slums, modern townships, and the dense Thana–Belapur industrial belt mostly composed of chemical factories. Since the development of *Navi Mumbai*, the indigenous population has been pushed to the periphery, both culturally by displacement from their old settlement, and economically by acquisition of their cultivable land (Banerjee-Guha, 1995, p. 114). The landscape is a mosaic of stone quarries at the base of the *Sayadhri* mountain range, sprawling slums, neatly divided settlement sectors with garden spaces, designer-housing complexes, office buildings, commercial and shopping complexes, hovercraft jetties, modern railway stations, and traditional fishing villages. A few privately-owned investment companies have unofficially promoted *Navi Mumbai* on the Internet as the city of the 21st century. Apparently, this message is meant for potential real estate investors from abroad, especially Non-Resident Indians (NRIs).

In comparison to *Mumbai*, public health facilities in *Navi Mumbai* are few. To date, *Navi Mumbai* does not have a public hospital. The Belapur Primary Health Center, one of the oldest in the region, caters to the population living within its catchment area. When fieldwork for the present study was concluded in June 1996, a few health posts and sub-centers of the Belapur PHC had been upgraded to mother and child health centers under a loan from the World Bank. At the time, over three-quarters of the privately owned nursing homes and polyclinics in *Navi Mumbai* were concen-

trated in just one of the seven municipal wards, namely Vashi. In 1994, compared to an estimated 20,000 plus registered medical practitioners in *Mumbai* for a population of 12 million, in *Navi Mumbai*, there were only 249 registered medical practitioners for a population of over half a million (Nandraj, 1994; Yesudian, 1994; Bhatia & Garg, 1994).³ Finally, while the private sector’s involvement in health spans over a century in *Mumbai*, *Navi Mumbai*’s private health sector is less than 25 years old.

Until recently, antimalaria measures such as active and passive surveillance, and fogging and larviciding with various oils, were implemented by the Government of Maharashtra (GOM) under the National Malaria Eradication Program (NMEP) in coordination with CIDCO and NMMC through its multipurpose workers. When fieldwork for the present study was in progress, the GOM and NMMC had divided administrative areas such as slums, villages and nodal areas for surveillance work. Despite the division of surveillance boundaries between the two organizations, in certain areas, there was either an overlap or neglect of surveillance activities. The NMMC did not have a pest-control/insecticides division of its own. In 1994–1995, larviciding operations were contracted out to a private pest control agency, but this exercise yielded disappointing results.

Methods

Preliminary information on practitioners in *Mumbai* and *Navi Mumbai* and their role in treatment of malaria was obtained from a larger ethnographic study which examined how lay people living in malaria-endemic urban areas interpreted and responded to the disease (Kamat, 2000b).⁴ The study compared the malaria situation in *Mumbai* and *Navi Mumbai* from a medical anthropological perspective. Preliminary data revealed

³These official figures represent only those practitioners who are registered with the local branch of the Indian Medical Association. The actual number of “doctors”, many with dubious qualifications, is substantial. For example, in the month of August 1994, during a crackdown on “quacks” in *Navi Mumbai*, 386 private practitioners were visited by the municipal health officials. Of these, 90 “doctors” were unable to produce their training/registration certificate. Although this move received much public and media attention, the effect was short lived. Following political intervention initiated by the “quacks,” who were well connected with local politicians, all penal actions were suspended and soon there was a return to “business as usual” (Ramesh, 1994).

⁴The research team on the larger project included the author as the P.I., a senior consulting medical entomologist, two female research assistants and two male research assistants, all with a master’s degree and previous research experience, and support staff.

that in over three-quarters of the cases ($N=400$) the first source of treatment outside the home was a for-profit private health care facility. Preliminary data also revealed that although the majority of people used the services of a private practitioner for reasons such as greater access, convenience of timing, non-availability of an alternative source of health care, and so on, they did so with little enthusiasm. Many were critical of practitioners (particularly in *Navi Mumbai*) for being unsympathetic and avaricious. Such sentiments were also extended to government health facilities such as the primary health centers in *Navi Mumbai*.

For the present study, a convenience sample of 48 practitioners — six each in eight municipal administrative wards which were selected for the larger study — were recruited and interviewed in detail on malaria-related issues. For the larger study, four wards in *Mumbai*; A, D, F-South and L/N, and four wards in *Navi Mumbai*; Belapur, Nerul, Turbhe and Koperkhairane were selected. The specific wards selected for the study were designated “endemic for malaria” by the malaria surveillance departments of the two municipalities on the basis of malaria incidence rates (number of malaria cases), vector potential (actual identification of permanent and temporary *A. stephensi* breeding sites) and vector detection. The Executive Health Officer (EHO) of MCGB, the Pest Control Officers, the Malaria Surveillance Inspectors, the Chief Medical Officer of NMMC, the malaria surveillance staff of the GOM, Thana District, and the Consulting Entomologist on the project were thoroughly consulted before the geographical boundaries of the endemic areas were demarcated and specific locales identified for data collection. Several privately owned pathology laboratories in the designated endemic areas were consulted to confirm the malaria endemic status of the specific locales in which data collection was proposed. The owners/managers of these pathology laboratories offered access to their computerized database on the recent blood tests done on suspected malaria patients. This turned out to be a useful strategy in determining the specific research locales. For instance, while the municipal surveillance figure for *Mumbai*'s entire D ward was 554 malaria cases during the first half of 1995, the consulting pathologist at a well-known pathology laboratory in the same municipal ward provided full details of blood tests done on 664 persons who were diagnosed with malaria during the same period. These figures were matched by a second privately owned pathology laboratory in the same ward.

The practitioners recruited for the study were sampled from a list prepared from interviews with local residents who were also participants in the larger household-level ethnographic study. They were asked to mention names of practitioners in their locality whom they most frequently visited. Names of practitioners most frequently mentioned by local residents were regarded as

popular practitioners and included in the list. The original strategy was to recruit a certain number of practitioners with an M.B.B.S. or a higher degree in allopathic medicine, and then to match that number with practitioners who had trained in other systems of medicine — Ayurved, Homeopathy, Unani, and others. This plan had to be abandoned because in two of the four wards in *Navi Mumbai*, there was not a single practitioner who had trained in allopathic medicine.

For this, equally representative samples could not be obtained for *Mumbai* and *Navi Mumbai*. Of the six practitioners selected from each municipal ward in *Navi Mumbai*, two each practiced in a slum, a village and a nodal (middle and upper-middle class township) area, respectively. The same criteria could not be applied to the selection process in *Mumbai* because the most prolific breeding sites of *A. stephensi* have been found historically in the middle and high-income areas, and not in the slums and other low income areas (cf. Kamat, 2000a; Covell, 1928). As a consequence, the middle and high income areas in *Mumbai* were more seriously affected by the malaria epidemic, and those living in the low-income and slum areas were mostly spared. The one exception was a stone quarry area in North *Mumbai* (L/N ward — one of the four research sites in *Mumbai*), known as Chandivali. This was a non-malarious area until 1992. By 1994, however, the incidence of malaria in the quarry area was extremely high. This trend was clearly associated with the massive construction activities in the vicinity that led to the creation of numerous untreated *A. stephensi* breeding sites, and the concentration of an estimated 15,000 migrant laborers. Six out of the 24 practitioners in *Mumbai* were recruited from Chandivali and the neighboring slum areas. Thus, the majority of practitioners recruited for the study in *Mumbai* practiced in middle and high-income areas. The sampling process, therefore, involved an unavoidable selection bias because of the local-focal nature of malaria in *Mumbai*. This may be seen as one of the limitations of the study.

In addition to the interviews, participant observation was carried out in several clinics. The most intensive observations were made in the clinics of 16 out of the 48 practitioners; eight each in *Mumbai* and *Navi Mumbai*.⁵

Only those practitioners who participated willingly were included in the study. A few practitioners, especially from high-income areas in *Mumbai* (Warden Road, Walkeshwar and Colaba-Cuff Parade) were initially uncooperative, but agreed to participate in the

⁵Data collection activities pertaining to the private practitioners often extended into the late evening hours, particularly in locales where light conditions were very poor. Thus, for the most part, I was assisted in my fieldwork by two male research assistants who took turns in accompanying me to the clinics for recording observations.

study after written assurances of confidentiality. The president of the local branch of the Indian Medical Association (IMA), and an influential politician and local municipal Corporator who was very concerned about the rising number of malaria cases in the ward he represented, were approached to facilitate the necessary cooperation. The initial reluctance of some practitioners to participate in the study was perhaps in response to the fact that they were being recruited (by coincidence) precisely at a time when, in a highly publicized case, the Supreme Court of India had upheld the COPRA. This had affected the mood of the medical community in negative ways (see Deshpande, 1995; Ganapathi, 1995; Khan, 1995; Menezes, 1995; Times of India, 1995). In *Navi Mumbai*, not all those who were included in the list of popular practitioners could be recruited. Interviews with six practitioners who had initially agreed to be interviewed had to be abandoned for lack of further cooperation. These practitioners were substituted with others from the list of popular practitioners. The sting operations carried out by NMMC against suspected “quacks” a few months before the practitioners were first contacted had generated an element of suspicion-cum-anger among some of the practitioners. During the interviews some practitioners from *Navi Mumbai* lamented the NMMC’s use of police force to interrogate suspected unlicensed practitioners. Practitioners were greatly worried about this trend and felt that they would lose popularity with their clientele because of the police who came to their clinics to check their credentials. Thus, the general political environment in which the present study was conducted was marked by considerable tension, and this had a bearing on the data collection process.

Although practitioners agreed to be interviewed, only 12 out of the 48 practitioners allowed their interviews to be audiotaped. Nearly all practitioners in *Mumbai* and *Navi Mumbai* examined their patients behind closed doors or in an examination room that was separated from the waiting room by a curtain, no matter the size of the clinic. Less than half of them were willing to allow me or my research assistants to observe their interactions with patients for reasons of patients’ confidentiality. This was especially true of practitioners from the middle and high-income areas of *Mumbai*. Sixteen clinics selected for detailed observations were visited on at least three different occasions, spaced over a period of six months. To obtain a more nuanced picture of what happened inside the clinics, observations were conducted for a minimum of two hours during the peak hours for patient visits between 10:30 a.m. and 1:00 p.m., or between 6:30 and 9:00 p.m. Some observation sessions lasted for more than four hours, punctuated by brief informal conversations with the practitioner and waiting patients. During the observation sessions, care-

ful attention was paid to how febrile patients reported their symptoms and the questions practitioners asked and the advice they gave to patients reporting “typical” malaria symptoms and especially “malaria-like fever.” Research assistants monitored the time patients spent waiting for a practitioner, and recorded how much time each practitioner spent with his/her patients on average. Through informal conversations in the waiting room, experiences of patients and their kin, with practitioners in their area and their views on prevention and treatment of malaria were documented. Observations and background characteristics were documented for 668 individuals; 15 on an average in each of the 48 clinics selected for the study. This included 121 children, 250 adult males and 297 adult females. Approximately 30% were kin who were there to accompany a patient (occasionally more than one). Seventy percent were patients who had come to the clinic without being accompanied by a family member.

Profile of private practitioners and their clinics

Background characteristics of the practitioners recruited for the study are presented in Table 1. All practitioners were for-profit private general practitioners engaged in full-time private practice. None held any other job. For example, none were employed as government doctors who engaged in private practice during part of the day.⁶ On the signboards displaying their names outside their clinics, all practitioners had acronyms representing qualifications, diplomas, memberships and titles earned. Some practitioners named their clinics after a family member or a traditional Indian virtue or deity. For example, one practitioner named his clinic *Dhanvantri Clinic*, after the patron deity of Ayurveda. Others had names such as Gurudeo Clinic, Sushrusa Clinic and Mitren Clinic. While only 15% of the study practitioners displayed their medical degrees/diplomas, certificates, or practicing licenses on the walls inside their clinics, all showed their credentials if asked. Practitioners in *Navi Mumbai*, especially those with bogus qualifications, had become sensitive to questions about their credentials following the sting operations of the NMMC, and the Supreme Court’s verdict regarding COPRA. Therefore, no attempt was made

⁶I do not want to disregard the fact that in India some government doctors also engage in private practice in one form or the other (Kamat, 1995). Private practitioners, especially consulting surgeons, also make use of public hospital facilities to serve their private patients (Yesudian, 1994). However, in the present study, no special attempt was made either to recruit or exclude such practitioners. Recruiting government doctors who engage in private practice is often an impractical task because such doctors practice discretely, and rarely on a full-time basis.

Table 1

Composite table showing (in percentages) background characteristic of practitioners from *Mumbai* and *Navi Mumbai* recruited for the study

Characteristics	Cities		
	<i>Mumbai</i> (n = 24)	<i>Navi Mumbai</i> (n = 24)	Total (n = 48)
Sex	%	%	%
Male	79	92	85
Female	21	8	15
Age			
<25	13	21	17
26–35	33	71	52
36–45	29	8	19
46+	25	–	12
Training and qualifications			
M.B.B.S. (Bachelors in Allopathy)	55	25	40
B.A.M.S. (Bachelors in Ayurveda)	8	29	19
B.H.M.S. (Bachelors in Homeopathy)	8	21	14
B.U.M.S. (Bachelors in Unani)	4	–	2
D.A.M.S., D.H.M.S. G.E.C.H., G.F.A.M. etc. ^a	25	25	25
Practice experience (in years)			
<5	25	42	33
6–10	17	21	19
11–20	33	33	33
21–50+	25	4	15
Member of professional body			
Yes	63	50	56
No	37	50	44

^aD.A.M.S., Diploma in Ayurvedic Medicine and Surgery; D.H.M.S., Diploma in Homeopathic Medicine and Surgery; G.E.C.H., Graduate Code of Examiners in Homeopathy; G.F.A.M., Graduate in Faculty of Ayurvedic Medicine; C.C.H., Course in Child Health; C.G.O., Certificate in Gynecology and Obstetrics; M.R.S.H., Member of the Royal Society of Health; A.R.S.H., Affiliation to Royal Society of Health; L.C.E.H., Licentiate to the Court of Examination in Homeopathy.

to ascertain the authenticity of the credentials that some of the practitioners produced in response to questions about their training, qualification, and work experience.

Only 56% of the practitioners in the study sample were members of a professional organization. This raises questions about the role of organizations such as the Indian Medical Association (IMA) and statutory bodies such as the Indian Medical Council (IMC) in regulating the activities of members of the medical community. Of the practitioners who were members, most held a membership in the local branch of the IMA. The rest were affiliated with an equivalent professional body for Ayurvedic or Homeopathic practitioners (e.g. *Vaidyakiya Seva Mandal*, *Ayurved Achar*, Integrated Homeopathy Practitioners Association), or locality or ethnicity-based associations such as Mid-town Medico, Dadar Medicos, Kutch Medical Association, and Kutchi Medicos. Most of the practitioners practiced only in one clinic, but 13% divided their time between two. Forty-eight percent of the practitioners owned their clinic; the remaining 52% practiced in rented premises.

Business hours

Most practitioners in *Mumbai* and *Navi Mumbai* kept their business hours between 10.00 a.m. to 1.00 p.m. and 6.00 p.m. to 9.30 p.m. Business hours, however, varied by season, and were contingent upon whether the practitioner also practiced elsewhere. During the peak malaria season, some practitioners in *Navi Mumbai* kept business hours from 10.00 a.m. to 9.00 p.m. with no break. It was also not uncommon for practitioners to stretch their hours till mid-night and beyond to cope with the enormous daily number of patient-contacts.

Physical amenities

Nearly half of the practitioners recruited for the study had clinics that were congested with patients and accompanying family members, and one-third were poorly ventilated and poorly lit. Thirty-seven percent of the clinics did not have running water inside the clinic, and were totally dependent on water stored in small plastic containers. This was typical of the majority of the clinics in *Navi Mumbai*, some of which measured

less than 10 × 10 feet. Most of the clinics in both cities were single rooms partitioned into two sections — one for waiting patients and the other for the practitioner and his/her examination table. In some clinics, the practitioner had a wall cabinet or a small wooden cupboard and an additional table to store medicines. In clinics with a dispensing facility, there was additional furniture such as a closet for the assistant/apprentice to dispense medicines to the patients and collect the practitioner's consultation fees. Given the physical environment in which many practitioners in *Mumbai* and *Navi Mumbai* carried out their practice, the practicality of expecting practitioners to provide good quality of care,⁷ to use hygienic methods, use microscopy, sterilize their wares, and pay sufficient attention to patient and family exigencies needs to be critically reexamined.

Support staff

The majority (92%) of the practitioners had hired at least one part-time or a full time lady or a young boy to take care of the everyday chores in the clinic such as sweeping the floor, filling the water tank, filling injections, dispensing medicines, collecting fees, monitoring the patients, and so on. In one clinic in the vicinity of Chandivali in North *Mumbai*, the practitioner was assisted by six young women whom he claimed were nursing students eager to receive some practical training before they migrated to the Gulf to take up a nursing job.

Clinic ambience and waiting period

Most clinics, no matter how congested, were nearly silent. Patients rarely shared illness stories with each other or spoke with kin while waiting for their turn to see the practitioner. This was because most of the patients who came to the clinics were not in a physical and emotional state to initiate a conversation. Furthermore, waiting times were often not long. In 71% of the clinics, patients had to wait for less than 10 minutes before they could see the practitioner. In 15% of the clinics, the average waiting time for patients was between 15 and 20 minutes. In the remaining 14% of

the clinics, patients had to wait for up to 30 minutes before they could consult the practitioner.

Patient load

The majority of the practitioners reported seeing around 35 patients per day (mean = 39 in *Mumbai* and 32 in *Navi Mumbai*). While 48% of the practitioners estimated that they received between 5 and 30 patients, 42% received between 35 and 60 patients, and the remaining 10% received between 65 and 100 patients each day. Patients' attendance in clinics, however, varied across the seasons, with the maximum practitioner-patient contacts occurring during the monsoon season. Furthermore, the number of patients attend a practitioner's clinic was contingent upon whether the practitioner kept business hours in the morning and in the evening, and whether the practitioner divided his time between two clinics. Most practitioners estimated that 55–65 patients per day attended their clinics during the peak malaria season — August to November (mean = 64 in *Mumbai* and 66 in *Navi Mumbai*). A small number (15%) claimed they received between 100 and 150 patients per day during the peak season. This claim was corroborated by routine headcount of patients attending several clinics during the course of the fieldwork.

Payment expectations

Three-quarters (75%) of the practitioners recruited for the study were dispensing practitioners. Besides writing prescriptions, they gave injections and I.V. saline drip, and dispensed non-parenteral drugs (paracetamol, vitamins, antimalarials, antibiotics, etc.) Patients were expected to purchase expensive drugs from a private pharmacy. The practice of dispensing less-expensive medicines as an indirect means of collecting hidden consultation fees, while prescribing drugs that the practitioner believes the patient will not be able to purchase immediately has been documented elsewhere in India (Nichter, 1996). Most practitioners charged an average of 20 Rs to their patients as consultation fees and for any prescription or medications dispensed (one US\$ = 36 Rs. in 1995–1996; the price for 1 kg of regular rice was 18 Rs). Practitioners also charged a fixed rate for each injection, such as 10–15 Rs. for a shot of B-Complex, or an injectable antiallergenic (e.g. Avil). In the low-income areas, practitioner often told the patient what the treatment would involve and how much it would cost before the consultation. If the patient requested "best treatment," then a more expensive treatment typically involving an injection or an I.V. saline drip was provided. Alternatively, if the patient indicated limited funds, then treatment was given for

⁷The concept of quality of care is difficult to define. According to Newbrander and Rosenthal (1997), quality of care includes technical, interpersonal and social aspects. Their definition suggests that there are several dimensions of quality, and the most commonly accepted ones are excellence and appropriateness of the clinical care rendered as judged by professional and societal norms, access, interpersonal relations or patient satisfaction, efficiency, continuity of care, consistency of care, and effectiveness of care (p. 179).

one or two days at the most; and was usually only good enough to bring symptomatic relief.

The majority of the practitioners (60%) claimed that they did not offer their services on credit. The others (40%) said that they offered credit extensions only to known and regular patients. Most practitioners received fees through their assistants who collected them from the patients on behalf of the practitioner. Out of the 48 practitioners only 42% said that they paid home-visits if called upon. The visitation fees involved an extra 10 Rs in the slums and villages in *Navi Mumbai* and up to 200 Rs in the high income locales in *Mumbai*.

Practitioner–patient encounters

In the recent medical anthropology and sociolinguistics literature, there has been a revival of interest in the speech economy of doctor–patient relations (cf. Ainsworth-Vaughn, 1998; Wilch, 1995, 1997, 1998; Mishler, 1984; Tood & Fisher, 1983). Researchers who have studied doctor–patient encounters in Western and non-Western cultural context have asserted that several kinds of power are realized in such encounters, most commonly a struggle between doctor and patient. Indeed, studies in various cultures have shown that medical encounters often are highly asymmetrical interviews in which doctors ask questions and patients answer. For patients to pose questions, they need not only an opportunity to question but also some basis on which they can negotiate an interactional status which gives them the right to ask questions (Ainsworth-Vaughn, 1998, p. 75). Wilch (1997) has observed that doctor–patient encounters are typically asymmetrical because they involve “two parties who are not only feeling well and unwell but who also have different access to economic resources...or knowledge” (p. 353). Furthermore, in Bangladesh, Wilch (1995) found that communicative privileges such as the right to assign labels or evaluate processes are typically held by doctors (p. 929). Yet, more recent work has emphasized patients’ acts of resistance to medical domination. In the present study, for the most part, patients were passive during their encounter with a practitioner. However, there were several instances when patients challenged the practitioner’s authority. Such patients labeled their illness of their own accord, refused to accept the doctor’s prescription, raised their voice to demonstrate anger, and/or overtly questioned the physician’s competence. Illustrative examples will be provided later.

Symptom reporting and questions asked by patients

In general, during doctor–patient interactions, practitioners controlled the discourse. The agenda of questions and procedural routines followed by many

practitioners was almost unvarying.⁸ Fever patients reported, either in monosyllabic “yes” or “no” responses or in brief sentences symptoms including *tez bukhar* (in Hindi, meaning high-fever), bodyache, cough, nausea, loss of appetite, shivering, weakness, malaise, dizziness, aching, watery eyes, bitter tongue, persistent vomiting, pain in knee joints, “*doka lai jaam jahalai*” (in Marathi — head has got “jammed,” become heavy) and “*kir kir*” (an onomatopoeia used to indicate heightened irritability). Patient-initiated questions were mostly about drug schedules and dosages, duration and diet. Most patients left it to the practitioner to decide whether or not to tell them anything about their illness, including its label, such as *thanditap* (in Marathi) or *thandbukhar* (in Hindi) — literally cold fever, i.e. malarial fever, or *sadatap* (in Marathi) — literally simple fever, i.e. ordinary fever. There were instances when a patient labeled his/her own illness as “malaria” (as used in English), *thanditap* or *thandbukhar*, even before the practitioner had begun asking questions about the symptoms and the history of the ailment.

Practitioners were asked to estimate the percentage of their daily patients who volunteered that they had malaria, *thanditap* or *thandibukhar*. Forty-four percent of the practitioners said that between 10 and 25% of their patients volunteered that they had malaria (in English) or its Hindi/Marathi equivalent. Another 46% said that more than half of their patients did the same, and that patients typically made statements such as, “*Doctor, humko malaria hua hai, malaria ka dawa dedo*” (literally in Hindi — “Doctor, I have got malaria, please give me malaria medicines”). Patients, were observed volunteering that they had “malaria” or its equivalent term in the local language in all the research settings in *Navi Mumbai*, but only in the Chandivali quarry area in *Mumbai*. On one occasion, my research assistants and I witnessed a serious altercation that ensued between a patient (a stone quarry worker) and a practitioner. Apparently the practitioner had written “fever” instead of “malaria” on the prescription slip and this had frustrated the patient’s expectations. The motive behind the patient’s insistence that the practitioner label his illness as “malaria” instead of “fever” was unclear.

Questions asked by practitioners

Practitioners were generally very brief in their questions to patients. Typical questions were: *Bukhar*

⁸ For a discussion on some of the methodological limitations of drawing conclusions based on observations limited to only one encounter between each physician and patient, see Ainsworth-Vaughn (1998). Apparently, initial encounters are different from repeat encounters, which if studied, will reveal that doctor–patient encounters are lot more complicated than the stereotyped asymmetrical relationship.

kab se aata hai? (in Hindi — Since when have you been having this fever?) *Thandi kab se lagti hai?* (in Hindi — Since when have you been shivering?), Have you shown yourself to any other doctor? What tablets have you eaten? Is fever persistent? Do you have bodyache? Where does it hurt? Do you salivate? Can you swallow food? What is the color of your urine? Have you completed the earlier dose?

The length of a typical doctor–patient encounter was 5 minutes or less. A practitioner spent the first 2 or 3 minutes with the patient exchanging pleasantries and asking about symptoms. The remaining 2 or 3 minutes were spent on a physical checkup (feeling the pulse, glancing at the tongue, using a stethoscope to monitor the heartbeat, and occasionally feeling the spleen for enlargement). The practitioner then wrote a prescription or dispense medications with a brief advice on the drug schedule and dosage (discussed detail later).

Brief informal conversations with patients waiting to see the practitioners, and those who had already seen the practitioner and were on their way out, revealed that practitioners who spent 10 minutes or more with each patient were not any more popular than those who spent 3 minutes or less with each patient. Several patients said that they had come to see the practitioner “to get medicines,” and that was all.⁹ For such patients, it mattered little whether the practitioner was an Ayurvedic, Homeopathic, Unani, allopathic doctor or a “quack” because no matter which doctor one went to, the kind of medications offered would be the same — allopathic drugs, and especially injections. Noting Indian patients’ distinct sense of pragmatism and practicality, Khare (1996) has observed that they habitually turn to different systems of medicine in any sequence or combination, to secure the “best treatment” (p. 839). Presumably, patients whose aim was “just to get medicines” from the doctor were certain about what they were suffering from. If past experience with the same illness was any guide, they knew what to expect from their visit to the practitioner. Such patients needed an injection or medications that would provide them with a temporary reprieve from a problem they knew was unlikely to disappear for good. “After all, the medicine cures; it is the active agent, and one seeks the best medicine at the lowest price” (Nichter, 1996, p. 256). Further interpretive work on this phenomenon is needed, especially in an urban setting, considering factors such as the age and gender of the patient, the

illness in question, characteristics of the practitioner, and the microeconomics of fee payment.

To attract and retain patients, practitioners commonly relied on their communication skills and their ability to adapt treatment to local expectations. Use of humor and psychologically supportive expressions such as “don’t worry, you’ll be all right soon” were common. Another characteristic practice, regardless of the locality, was addressing patients with fictive kin terms suggesting closer ties, such as *bahu* (brother), *tai* (sister), *maushi* (aunt), *kaka* (uncle) and *gaonvalle* (native colleague). Furthermore, on several occasions, practitioners were observed scolding their patients for non-compliance. A close examination reveals that the underlying motive behind such gestures is often tied to the practitioner’s goal of retaining the patient’s patronage by demonstrating closeness and concern for his/her welfare, and also as a means to persuade such patients to refer other prospective patients to “the doctor who really cares.”

In contemporary urban India, both practitioners and patients have to juggle with the moral-commercial contradictions inherent in their relationship. On the one hand, the local cultural model encodes behaviors that are appropriate or inappropriate for doctors. Practitioners are expected to demonstrate compassion and kindness to their patients and to cure them. They are not expected to profit from their patient’s suffering. At the same time, patients believe that the more expensive the doctor and the treatment prescribed, the greater the chances that the medicines will bring a cure (Nunley, 1996). Patients are also aware that no matter the moral expectations, the essence of their relationship with a practitioner is a fee-for-service commercial transaction. Thus, patients do not take ingratiating gestures such as being called a fictive brother or a sister by the practitioner very seriously, because from a cultural perspective a practitioner is not expected to accept any kind of payment from a family member/kin who he/she has treated. The practice of using fictive kin terms to address clients is a cultural practice that is ubiquitous among traditional businessmen/commercial traders in India. Its extension into the medical field is an indication of the excessive commercialization of health that has taken place in the country.

How practitioners diagnose their patients with malaria

Practitioners were interviewed in detail about how they made their diagnoses. Six percent of the practitioners said that they relied exclusively on algorithms based on clinical symptoms which they noticed in their patients. Four percent said that they relied exclusively on symptoms their patients reported to them. However,

⁹This is not to suggest that people relied only on medications they sought from doctors. In fact, a discourse analysis of the transcripts of interviews with several patients revealed that many had simultaneously consulted a shaman or a temple priest about the illness while also taking the medications prescribed by a doctor.

58% of the practitioners relied on both indicators. Twenty-three percent said that, in addition to the two symptom indicators above, they practiced “diagnosis by treatment,” in which the efficacy of the drug determined the illness, which might be malaria “resistant malaria” or some other disease (see van der Geest & Whyte, 1988). The same logic was used by some practitioners to determine whether the patient was infected with *P. vivax* or *P. falciparum*. Only 15% said that they relied on the patient’s peripheral blood-smear report. The majority (65%) of the practitioners said that they rarely ever advised their patients to go for a blood-smear test. Others advised a blood-smear test for patients who presented symptoms which did not clearly indicate malaria, or patients who had not responded to previous treatment.

Practitioners were asked if they could tell without the aid of a blood-smear test whether their febrile patient was infected with *P. falciparum* or *P. vivax*. While 64% of the practitioners affirmed that only a blood-smear test could tell the difference, others said that they relied on what they considered typical distinguishing symptoms. If the fever was cyclical, then it was deemed that the patient was infected with *P. vivax*. If the patient had high fever, and if the fever came with an unpredictable frequency accompanied by severe headache, then it was believed that the patient was infected with *P. falciparum*. Some practitioners said that if the patient responded to chloroquine, then he/she was infected with *P. vivax*. If the patient did not respond to chloroquine, most practitioners assumed that the patient was infected with *P. falciparum*, and prescribed subsequently quinine. One practitioner from *Navi Mumbai* who had a bachelors degree in Ayurvedic medicine said that if his febrile patient reported passing yellow urine, he concluded that the patient was infected with *P. vivax*. If the color of the urine was red, he presumed that the patient was infected with *P. falciparum*. Research is needed to find out the extent to which diagnoses made by practitioners who rely on subjective indicators is consistent with diagnoses made on the basis of clinical criteria such as a blood-smear test.

Dealing with complicated cases

All practitioners were asked whether they dealt with cases of complicated malaria. Forty-two percent replied in the affirmative and said that they had encountered patients with the following complications: indistinguishable symptoms, cerebral malaria, relapse/recrudescence cases, mixed infection, malaria with typhoid, malaria with hepatitis/jaundice, pregnant women with *P. falciparum*, drug-resistant patients, and patients who were unconscious when brought to the clinic. Typically, such patients were referred to a private or public hospital.

Others, who claimed to have handled complicated cases on their own, had recommended a blood investigation for accurate diagnosis and treatment, and treated the patient with mefloquin, quinine, or primaquine. Issues pertaining to the role of practitioners in the referral system, while important, were not explored in the present study.

When probed further about blood-smear tests, practitioners with mostly poor clientele gave three main reasons why they thought it was futile to send their patients for a blood-smear test. First, patients who came to see them rarely had enough money to fill the prescription, let alone to get the blood tests done — a procedure that would cost 75–150 Rs, depending on which pathology laboratory the patient went to. Second, most of the patients presented symptoms that so clearly indicated malaria that a blood-smear test would be redundant. Finally, practitioners feared that they would lose the patronage of patients whose primary concern was low-cost symptomatic relief. Reflecting on this issue, a middle-aged female practitioner from a village in *Navi Mumbai*, who had trained in Ayurvedic medicine said:

I rarely tell my patients to go for a blood (smear) test. Even then, the patient will say “*janedo na doctor saab. . .jo kuch hai likh khe de do na. . .do din ke baad accha nahi lagega to dekha jayaga. . .*” (that’s okay doctor (no need for a blood test)..be it..for now you write me a prescription..whatever it is..if I don’t get better after two days, I’ll come to you again and we will then see what to do).

Similarly, a young male practitioner from the F-South ward of *Mumbai* exclaimed; “If I advise my patient to go for a blood test, that will be the last time the patient will come to me!” Practitioners acquiesced to the expectations of their patients, knowing that if they insisted on a blood-smear test as a prerequisite for prescription, they were sure to lose the patient to some other doctor who offered inexpensive treatment.

Treatment practitioners give to patients diagnosed with malaria or suspected malaria

An analysis of the data on treatment patterns of practitioners for malaria revealed that even within the same city and in the same neighborhood the patterns varied greatly among practitioners. Overall, the line of treatment followed by over two-thirds of the practitioners in *Mumbai* and *Navi Mumbai* was not in accordance with the biomedically defined dosage levels and schedules of anti-malarials appropriate for different

age/weight categories of patients.¹⁰ More than two-thirds of the patients who were followed had not been prescribed a full prescription. Without exception, practitioners in slums and villages/low-income areas wrote prescriptions or dispensed the medications for only one or two days. A middle-aged male practitioner from a middle-income area in *Navi Mumbai* who had trained in Homeopathic medicine, said:

If I don't please my patients, they will go to another doctor. You see, malaria in *Navi Mumbai* is like a one-day cricket match. I have only one day to win the patient, or else I will lose him. The patient will not come back to me, but will go to another doctor who will give him what he wants.

Almost all practitioners from low-income areas advised their poor and/or less educated patients to return to the clinic after they had purchased their prescriptions from the local pharmacy. Patients were asked to show the drugs they had purchased to the practitioner or his/her assistant who then verified whether the patient had purchased the correct medications. The opportunity was then used to explain the schedule and dosage of the drugs. Informal interviews with patients after they had received the doctor's prescription revealed that some patients were uncertain about the dosage schedule that the practitioner or the assistant had explained to them.¹¹ Unfortunately, systematic data were not collected on patient's comprehension of advice pertaining to schedule and dosage of the drugs prescribed. With respect to antimalarials, lay interpretations of medicine efficacy, compliance of

patients with the recommended schedule and dosage, and the practice of self-regulation of prescriptions are important issues that warrant further research.

Antimalarials: a multitude of brand products

The range of antimalarials being marketed and prescribed in *Mumbai* and *Navi Mumbai* was documented in detail. During interviews with practitioners, detailed information was elicited about the type of drugs they prescribed to their malaria patients. In addition, prescriptions were verified and drug purchasing practices were monitored at local pharmacies. Malaria-related drugs sales were monitored briefly for three to four hours in eight pharmacies at random to gain some insights into the interface between the pharmacy, the practitioners and malaria patients. Forty customers purchasing antimalarials for treatment and prophylaxis, with or without prescription, were also briefly interviewed (exit-interviews) to elicit information on medicine purchasing and consumption patterns. Among the most frequently prescribed antimalarial and adjunct drugs (brands) for infants and children below the age of 16, were, in the order of frequency of prescription: Lariago, Malarquin, Nivaquin, Quinine Sulfate, Resochin, Emquin, Rubiquin, Reziz-forte, Amalar, Reziz, primaquine, Ciprofloxacin (antibiotic), and Crocin syrup (paracetamol). Almost all practitioners claimed they avoided giving quinine therapy to infants and children.

The most frequently prescribed antimalarials and adjunct drugs for pregnant women were similar to those prescribed for infants and children. As with infants and children, most of the practitioners said they rarely or never resorted to quinine therapy for pregnant women. Most of them were also aware that Primaquine therapy was contraindicated for pregnant women. The "Clo-kit" brand of chloroquine (an Indoco Remedy product) was a popular recommendation. It came in a single packet of conveniently divided doses. Among the quinine brands prescribed to pregnant women, the most popular were Quinidol, Quininga, Qunitor, Quinisol, Emquin, and Reziz-Q. For lactating mothers and adult females, none of the practitioners said that any antimalarials were contraindicated. Most practitioners prescribed chloroquine brands ("Lariago" being the most popular) quinine, pyrimethamine and sulfadoxine brands to lactating mothers. For adult males, none of the antimalarials were contraindicated.

Despite the claims made by practitioners, there were obvious discrepancies between what they claimed and what their actual prescribing behavior revealed. Other adjunct antacids, antiulcers, antiemetic and antinauseants were Aciloc, Normadil, Domestol, Nasueadom, Ranitidine, Omaz, Blockacid, Stemetil, and a few others. The availability of such a wide range of different brands

¹⁰The correct treatment for malarial infection depends on several factors — whether the infection is *P. vivax* or *P. falciparum* or both. Age/weight, pregnancy status, and other health conditions are also crucial drug and dosage determining factors. The NMEP recommends that all microscopically positive cases of malaria should be given radical treatment with primaquine for its gametocytocidal and anti-relapse properties. Radical treatment for *P. vivax* infection is a single dose of 600 mg chloroquine (10 mg/kg body weight) and 15 mg primaquine (0.25 mg/kg body weight) on the first day followed by 15 mg primaquine (0.25 mg/kg body weight) daily for the next 4 days. The recommended radical treatment for *P. falciparum* infection is (adult dose): 1500 mg chloroquine in three divided daily doses (i.e. 600 mg each on the 1st and 2nd day and 300 mg on 3rd day) plus 45 mg of primaquine on first day. This dose is to be suitably adjusted for other age groups. The NMEP cautions that infants and pregnant women are not to be given primaquine (Government of India, 1995, pp. 16–30; see also Sorabjee, 1996).

¹¹For example, a patient returned to the practitioner and said "Doctor, I forgot how to take these tablets after reaching home. Please tell me when to take which tablet...please put these tablets in a separate *pudi* (paper packet) so that I understand and remember which tablet is in which *pudi*."

of antimalarials in *Mumbai* and *Navi Mumbai* was one of the indicators of the intense competition that existed among different pharmaceutical companies, each trying to capture its share of the “malaria market” with “me too” products (see Kamat & Nichter, 1997, 1998). Interestingly, some practitioners said they occasionally prescribed Ayurvedic medicines to their malaria patients. Examples of these were: *Sudarshan Ghanvati*, *Sudarshan Narwadi*, *Melosar*, and *Dasamulaaristha*. Those trained in Homeopathy were aware of Homeopathic drugs for malaria. However, they refrained from recommending such drugs to their patients because they were not sure of the results. In any case, patients had access to a multitude of commercially available antimalarials that did not necessitate the prolonged therapy typical of homeopathy.

A review of a sample of 159 prescriptions for malaria patients, involving 309 drug items, revealed that 57% of the prescribed drugs were antimalarials, while the remaining 43% were adjunct drugs such as antacids, antiemetics and antinauseants.¹² In other words, patients in *Mumbai* and *Navi Mumbai* were spending a lot more money on malaria treatment than they would have if they had been prescribed only an antimalarial.¹³ Significantly, quinine was prescribed twice as often in *Navi Mumbai* as compared to *Mumbai*, reflecting assumptions regarding the prevalence of chloroquine resistance in *Navi Mumbai*. Many practitioners were convinced that their malaria patients had stopped responding to chloroquine treatment because of drug resistance. A few practitioners from *Navi Mumbai*

claimed that people had started self-medicating with quinine, without following the proper dosage and schedule. However, while nearly all practitioners said that self-medication for malaria was quite common in their locality, two-thirds said that self-medication with an antimalarial was not as widespread as it was with paracetamol (for treatment of fever) and other popular medications available over-the-counter. Practitioners from *Navi Mumbai* in particular claimed that at least 50% of their fever patients came to them after having self-medicated with “Action-500” (an antipyretic) or “Lariago,” the most widely prescribed brand of chloroquine sulfate.¹⁴ Most practitioners were irked that their patients used such drugs to self-medicate and thus masked their symptoms. As noted earlier, one of the most common questions practitioners asked their patients was whether they had taken any medications before coming to the clinic. One practitioner blamed the trend in self-medication with antimalarials on pharmacists who “sell drugs as if they were onions and potatoes.” However, drug sales monitored at local pharmacies indicated that only 6% of the antimalarials and adjunct drugs were purchased without a prescription. Thus, the data did not corroborate the claims made by some practitioners that self-medication with antimalarials had become a common phenomenon in their area.

The discrepancy between the magnitude of self-medication with antimalarials as perceived by some practitioners, and the trend revealed by drug-sales monitored at pharmacies, may be attributed to (a) practitioners over-estimating the magnitude of self-medication with antimalarials in their area, and (b) monitoring of purchases during the morning and evening hours, which were peak hours for the local practitioners. Probably, most of the purchases were made by customers and patients who had arrived at the pharmacies immediately after they had received a prescription slip from the practitioner. It could be that others who purchased their medicines over-the-counter came at other times of the day. This points to a need to examine in detail the phenomenon of self-medication with antimalarials. Nevertheless, given the high cost of antimalarials as against an antipyretic, and the acute nature of a malarial infection, the prevalence of self-medication with antimalarials in *Mumbai* and *Navi Mumbai* was probably far less than what practitioners interviewed for the study claimed. Furthermore, malaria was still a “new” disease for the majority of the people

¹²Data on drug-sales monitored at the local pharmacies, and exit-interviews with 40 customers who had purchased antimalarials revealed that not all practitioners had specified the dosage and schedule/duration of the therapy on the prescription slip. Such cases accounted for 16% of the drugs. Excluding these, of the remaining drugs ($N=261$) as many as 24% of the drugs were prescribed for 2 days or less, 36% for 3 days, and 37% for 4 days and more. The remaining 3% of the drugs had been prescribed for 2 weeks. Nonetheless, the majority of the customers did not purchase a full prescription.

¹³On an average a customer who purchased an antimalarial spent 16 Rs per transaction (range = Rs1.50 paise to Rs 51.50 paise). A strip of chloroquine sulfate containing 10 tablets was sold at Rs 9.75 paise, whereas a single tablet of quinine sulfate was sold at Rs 4.50 paise or Rs. 5.50 paise, depending on the brand. A complete course of quinine therapy required the patient to spend at least 130 Rs. Those who had purchased only chloroquine spent Rs 4.50 paise on an average per transaction, while those who prescribed quinine spent 24 Rs on an average per transaction. Interestingly, patients spent more on adjunct drugs than on the antimalarials they were prescribed. For example, the price of 10 tablets of the most frequently prescribed antiacid-antiulcer drug Ranitidine-50 was Rs 21.50 paise. Similarly, 10 tablets of the most frequently prescribed antiemetic and antinauseant, namely “Demostal” was Rs 20.75 paise.

¹⁴Action 500 is a brand of Proctor and Gamble India Ltd, and includes the following ingredients — Paracetamol 500 mg, Ephedrine HCl 12 mg, and Caffeine Anhy. 32 mg. Lariago is a brand of IPCA Laboratories, and includes chloroquine phosphate 250 equivalent to 155 mg of chloroquine base as its ingredient.

of *Mumbai* and *Navi Mumbai* and therefore knowledge about the appropriate drugs for self-medication may not have spread beyond certain locales other than those that were most severely affected by the epidemic. Indeed, if self-medication with antimalarials was as widespread as some of the practitioners claimed, then they would probably not be seeing as many patients as they did. Clearly, there is an inherent contradiction in the concern expressed by practitioners regarding self-medication at a time when they themselves were under-dosing their patients by routinely treating them for one or two days. A follow-up study is necessary to find out whether self-medication with antimalarials is now a more common phenomenon in *Mumbai* and *Navi Mumbai*, given that malaria is still widespread in both cities.

Changing trends in treatment

Practitioners from *Navi Mumbai* in particular were vivid in their descriptions about how clearly some of the symptoms of malaria had changed over the years in their locality. Many of them described how the changing symptoms had affected their diagnosis, treatment, and prescriptions. For example, a young male practitioner from a village in *Navi Mumbai* with a bachelors degree in Ayurvedic medicine said:

95% of my patients are malaria patients. Only 5% of my patients come with other complaints. Even I am bored of having to deal with the same type of patients, with the same disease, and needing the same treatment month after month. Three years ago when I started my practice, “Lariago” (chloroquine) was effective in treating my malaria patients. Now chloroquine tablets are simply ineffective. I have to resort to quinine. I think people in this area get only malaria and nothing else — they have become resistant to all other diseases!

The above quote sheds light on some important assumptions made by this practitioner in regard to the patients he treated: that nearly all of his patients were malaria patients and that chloroquine was no longer an effective drug. Considering the fact that this practitioner had set up his practice in a malaria endemic area, his decision to treat all febrile patients as suspected malaria cases may be regarded as consistent with the guidelines set by the NMEP for treatment of malaria in endemic areas. However, in his interview, this practitioner mentioned about the futility of prescribing a full course of antimalarials to his patients. Since most of the practitioners in *Navi Mumbai* did not rely on a blood-smear test to confirm a diagnosis, many patients who were suffering from a disease other than malaria were probably being wrongly treated with antimalarials. To date, evidence of chloroquine resistance in *Navi Mumbai*

has not been authenticated by pharmacoepidemiological studies. If patients had stopped responding to chloroquine as many practitioners claimed, it is possible that many patients were not suffering from malaria but from some other disease with symptoms complicated by fever. The practitioner’s remark that people had become resistant to all other diseases may be an exaggerated statement, although the implications of such statements are considerable as they raise questions about comorbidity. Were the people of *Navi Mumbai* not suffering from ordinary fever, tuberculosis, acute respiratory infections, urinary tract infections, and diarrhea?

Another young male practitioner from a slum in Turbhe ward, *Navi Mumbai*, with a bachelors degree in Ayurvedic medicine, explained:

Patients come to me with symptoms like severe headache, bodyache and nothing else — no history of fever, no palpating stomach (spleen), no chills, no other person in the family down with malaria. If I get an MP (malaria parasite) blood test done, I am 100% sure that every such patient will have malaria — even when the “textbook” symptoms are absent. I take no chances and treat almost all my patients for malaria. If the medicine I give does not cure them (i.e. if they don’t have malaria), then it will at least help the patient to prevent contracting malaria (i.e. the drugs will act as prophylaxis). Either way it works. I also give an antibiotic like ciprofloxacin or an anti-inflammatory along with antimalarials to my patients. If nothing else, it will get rid of all other infections in the patient’s body.

This practitioner’s observation that people infected with the malaria parasite(s) may reveal none of the classical “textbook” symptoms such as high fever with chills, etc., is consistent with some of the facts about malaria symptomatology endorsed by the NMEP. Routine prescription of a broad spectrum antibiotic like ciprofloxacin as a prophylactic drug to suspected malaria patients along with antimalarials, however, is an expensive, wasteful, and dangerous therapy. Yet, it may be argued that given the social and microeconomic environment in which practitioners were carrying out their practice, clinically irrational practices made good economic sense (Nichter & Vuckovic, 1994). Combining antibiotics with antimalarials was not a characteristic feature of the practitioners from *Navi Mumbai* alone. Many practitioners from *Mumbai*, even those who were well-qualified, had incorporated antibiotics as part of malaria therapy.

On drug resistance

As compared to 46% of the practitioners from *Mumbai*, 87% of those from *Navi Mumbai* said that

their line of treatment and prescription patterns (dosage/schedule etc.) for malaria had changed “significantly” during the past 2–3 years. The most striking change was quinine rather than chloroquine as the drug of choice. With regard to specific changes in the prescribed drug, the majority of *Mumbai* practitioners relied on chloroquine as the first line of treatment. Quinine sulfate, primaquine and occasionally mefloquine were prescribed if chloroquine therapy failed.¹⁵ The numerous “relapse” cases of malaria reported by practitioners in *Navi Mumbai* may partly be attributed to the fact that many practitioners assumed that their patients were infected with *P. falciparum* and treated them with either chloroquine or quinine, but rarely with primaquine. In any case, follow-up of patients was difficult, and practitioners believed that patients who were reluctant to take a full course of chloroquine or quinine would simply not comply with a 15-day course of primaquine. Queried on the sale of primaquine, a local pharmacist remarked: “Private doctors in *Navi Mumbai* have forgotten that a drug called primaquine exists. If we do get a prescription for primaquine, it is invariably from a hospital.”

In this regard, the comments of two senior practitioners from *Mumbai* who gave differing accounts of the malaria scenario on the basis of their experience are worth examining. The first with an M.B.B.S. degree who was practicing in a middle-income area of *Mumbai*'s F/S ward said:

No. My treatment has not changed significantly ever since I started my practice in this area eight years ago. Some doctors say that people have become resistant to chloroquine but so far I have not come across even a single case that could be called chloroquine resistant. My first line of treatment is chloroquine, and only in the rare event that the patient does not respond to chloroquine, do I treat him or her with quinine, but again, and I emphasize, only *very rarely*.

The second, also with an M.B.B.S. degree, who was practicing in *Mumbai*'s A ward said:

Resochin, Lariago, Nevaquin, they all work wonders in most cases of malaria. A few years ago, only 4 tablets of Lariago or Resochin were sufficient to cure a malaria patient completely, but now the scenario

has changed — at least 10 tablets have to be given — starter dose of 4 tablets, and 2–2- after six hours and 1–1 after 8 hours. Nowadays, patients don't suffer from malaria alone, they have other infections too, so when I treat them, I also give them antibiotics like doxycycline, cirpofloxacin, and if patients don't respond to chloroquine alone I give doxycycline and pyrimethamine and sulfadoxine.

Together, the above quotes are revealing as they demonstrate how two senior practitioners who had to deal with malaria patients in the same city, differed in their opinion regarding how much the situation had changed with regard to treatment of malaria patients. While the practitioner from the F/South ward was convinced that despite the epidemic-like situation, chloroquine was still the drug of choice, the practitioner from the A ward was convinced that malaria in *Mumbai* was no longer what it was a few years ago. Treatment of malaria patients had become a lot more complicated and warranted higher dosages of chloroquine, occasionally combined with antibiotics. Interestingly, as noted earlier, 54% of the practitioners in *Mumbai* retained their faith in the efficacy of chloroquine and did not believe that malaria patients had stopped responding to chloroquine. On the other hand, the remainder of the practitioners had changed the drugs they were using until recently to treat malaria patients. Injectable chloroquine, quinine, mefloquin and broad spectrum antibiotics such as doxycycline and ciprofloxacin had become part of the new malaria therapy/regime. The trend revealed by the data from *Mumbai* are consistent with the findings of another study on the prescribing habits of practitioners in *Mumbai* with respect to malaria (Garg et al., 1995).

In *Navi Mumbai*, besides prescribing newer brands of the same drugs (chloroquine and quinine), practitioners had started prescribing quinine sulfate either as a first line of treatment or as a follow-up treatment if chloroquine therapy failed to bring relief to the patient. Almost all practitioners in *Navi Mumbai* claimed that along with changes in the schedule and dosage levels, they had also changed the drugs they were prescribing regardless of brand names. A young male practitioner from a slum in *Navi Mumbai*, who had a certificate in Homeopathic medicine, but who freely dispensed/prescribed allopathic drugs, said:

Three months ago I used to prescribe chloroquine and patients were responding well. One month later they stopped responding to chloroquine. So I started with quinine brands, but again after one month they stopped responding to that too. Then I started prescribing Pyralfin (Pyrimethamine and Sulfadoxine), but of late people have stopped responding even to Pyralfin. So I started dispensing and prescribing

¹⁵Garg et al.'s 1994 survey of 40 GPs in *Mumbai* on their antimalarials prescribing practices revealed that though chloroquine was used as the drug of first choice by 21 practitioners, the dose used varied from 2 to 20 tablets for treatment of an acute attack in adults. Nineteen practitioners prescribed sulphadoxine-pyrimethamine as the drug of first choice for an acute attack. The dose used varied from 2 to 3 tablets as a single dose, and resistance was reported by all practitioners (Garg et al., 1995).

Wysolone (Prednisolone (corticosteroid), a Wyeth product). My patients say that they feel better with Wysolone. Earlier I used to give chloroquine for *vivax* cases and quinine for *falciparum* cases, but now everything has become *ulta phulta* (topsy turvey).

This quote reveals a notion held by several practitioners in *Navi Mumbai* that malaria had gone awry, evidenced most obviously by the fact that people had stopped responding to one drug after another in a matter of months. In the case of the practitioner quoted above, his patients had not only stopped responding to chloroquine, but also to quinine and pyrimethamine and sulfadoxine, and all this had happened in a matter of a month or so! From a biomedical perspective, this perception about the dramatic change in drug resistance may be counteracted. However, viewed from an ethnographic perspective, one cannot ignore the practitioner's own perceptions of the drug-resistance phenomenon. What is more, this practitioner had discovered Prednisolone, a steroid drug commonly prescribed in India to people with chronic bronchial asthma, made his patients feel better — not chloroquine, quinine or pyrimethamine-sulfadoxine. If patients had stopped responding to antimalarials but were responding to a corticosteroid commonly used to treat asthma patients, it could be that patients were in fact suffering from an acute/upper respiratory infection (ARI/URI) or asthma. Unfortunately, in the absence of studies on the problem of drug resistance in *Navi Mumbai*, it is hard to make conclusive interpretations about what was really going on with the incidence/prevalence of malaria and resistance to antimalarials.

Popularity of injections and I.V. saline drip with malaria patients

During the early stages of fieldwork in the low-income areas of *Mumbai* and *Navi Mumbai*, my research assistants and I observed patients in several clinics lying on the bare floor or on wooden benches, while they received a bottle of I.V. saline drip. This appeared to be an everyday phenomenon in *Navi Mumbai*, but a less commonly noticed phenomenon in the clinics of *Mumbai*. Seventy-five percent of practitioners acknowledged that injections were very popular with their patients,¹⁶ and that patients often “demanded” that they be given an injection for their ailment. Similarly, 65% of practitioners said that I.V. salines were immensely popular with their malaria patients. Practi-

tioners who said that injections and saline drip were not popular in their practice area were mostly from *Mumbai's* high-income areas.

In *Navi Mumbai*, most practitioners claimed that at least 50% of their malaria patients came to them with a “treatment plan” already in mind, and “demanded” that they be given I.V. saline drip, even when told that saline was not necessary to bring relief or cure. A middle-aged female practitioner with a certificate in Ayurvedic medicine, who was practicing in her natal village in *Navi Mumbai*, summarized the situation in the following words:

At least 50% my patients tell me “*doctor, glucose ka batli chadao*” (literally, doctor, please fix me a bottle of glucose saline). They believe that they will be cured faster if they took one or two bottles of saline. If I tell them that saline is not required, they will not believe me. They will not insist either, but will simply walk out of my clinic and go over to the nearest doctor or a hospital and get what they want. Then they will come to me after a few days and say “Look doctor, I went to that hospital and took 12 bottles of saline and now I am all right!”

Although the people of *Navi Mumbai* generally resented the fact that malaria therapy involving I.V. saline was expensive for some people it represented a new-found status marker. The greater the number of bottles of I.V. saline one could afford, the higher was one's perceived economic status. This perception was meaningful in a cultural context where accounts of how much money one had spent on malaria treatment were a staple of everyday conversations in homes, market places, buses and commuter trains. Use of I.V. saline therapy signified that one was in a position to spend large sums of money in treating oneself or a family member. Practitioners on the other hand attributed the popularity of I.V. saline drip to people's perceived efficacy of saline, to cool the body and bring quick and longer lasting relief. However, contrary to what practitioners said of patients “demanding” I.V. saline drip, patients were rarely heard insisting on an I.V. saline drip. On the contrary, quite a few practitioners were observed persuading their patients to accept a bottle of I.V. saline as part of the treatment. On one occasion, in a village in *Navi Mumbai*, I heard a practitioner say to his patient who was a construction worker: “You are so weak. If I give you only medicines, you will not be able to digest them. This (saline) will make you feel better.” The profit motive underlying the practitioner's suggestion was obvious. In this case, the patient did not comply, saying that he needed the money to buy food for his family. While not many instances of patient-initiated “demands” for an I.V. saline were observed, my research assistants and I did document quite a few instances where a patient had insisted on an injection.

¹⁶The popularity of injections in the developing countries has been documented in medical anthropological research (cf. Whyte and van der Geest 1994; Whyte, 1984; Reeler, 1990; Cunningham, 1970).

Treatment for malaria that included I.V. saline drip was at least 10 times more expensive than treatment that involved only an injection. Significantly, 77% of the practitioners supplied I.V. saline drip to their patients from their stock,¹⁷ and charged their patients a flat rate that was in the range of 80–100 Rs in *Navi Mumbai* and 130–300 Rs in *Mumbai*. The remainder (23%) advised their patients to purchase saline bottles from a local pharmacy, and charged the patient 30 or 40 Rs as a service charge for administering the I.V. saline drip. Administering one bottle of I.V. saline drip meant that the practitioner had to be around the patient for at least two hours. On one occasion, I was witness to a quarrel pertaining to I.V. saline drip between a practitioner and his patient who was a resident in the local village in *Navi Mumbai*. The practitioner had administered a bottle of I.V. saline to this patient as treatment for malaria. Half-way through the process, the patient said: “Doctor, this is taking so much time. . . I have to go to work. So what do I do?” The practitioner promptly replied in a casual manner: “No problem, you can drink whatever is remaining in the bottle.” The patient, who looked totally nonplussed by the practitioner’s matter-of-fact advice, became furious and said “You must be crazy doctor, if this is something you think I can drink, am I an idiot wanting to lay down here for an hour to get this thing into my body through a needle, and pay 100 Rs for all the trouble?!” A serious quarrel ensued over the patient’s refusal to pay the practitioner for the I.V. saline drip he had received. Such instances, while rare, do challenge the stereotypical image of patients as passive actors in doctor–patient encounters.

In *Navi Mumbai* in particular, practitioners capitalized on the notions their patients carried about the dramatic and long-lasting effects of I.V. saline drip. They routinely injected additives into the bottle of saline that was being administered to the patient. Typically, these additives were parenteral B-complex, multivitamins, or Avil (antiallergenic), added either as a single adjunct or often as a mixed adjunct — e.g. Avil or

Betnosol and B-complex, along with chloroquine, quinine, Ranitidine or paracetamol.¹⁸ The cost of one bottle of saline to the patient often included the cost of these additives. Some practitioners charged a minimum rate of 100 Rs for the first bottle of saline, and 60–70 Rs for every additional bottle administered thereafter. In one case, a practitioner from South *Mumbai* said that he rarely agreed to give I.V. saline drip to his patients as it was a time-consuming activity, and because his clinic was not large enough to accommodate a patient who was laying down for two hours or more during regular business hours. The practitioner said that he agreed to administer I.V. saline drip to his patients only in emergencies, and he charged the patient 300 Rs per bottle on such occasions. A few other practitioners (mostly from South *Mumbai*) also said they only gave I.V. saline drip to their patients in emergencies.

Whether the existing situation was patient-driven or practitioner-initiated and reinforced, or whether both actors had set in motion a process that had made malaria therapy exceedingly expensive for the patient, are highly profitable for practitioners, is debatable. A more significant issue is the striking difference between the two cities in the frequency with which patients received I.V. saline drip as part of the treatment for malaria. This difference can partly be explained by the fact that unlike the situation in *Mumbai* where the middle and the upper class people were among those who were more seriously affected by the epidemic, in *Navi Mumbai*, people of all social classes were affected. Those who were the poorer, less educated and those who lived in slums and villages had little option but to resort to practitioners whose pecuniary interests were overwhelming, and who persuaded patients to accept I.V. saline drip as part of the treatment for malaria. Over time, I.V. saline drip had become part of the cultural model shared by the poor peoples of *Navi Mumbai* regarding the appropriate treatment for malaria. The same was less evident for the majority of the patients from *Mumbai*.

¹⁷In India, it is a common practice for pharmaceutical companies to sell drugs and intravenous fluids directly to GPs and private nursing homes. They sell them to patients, often as a means of indirectly collecting consultation fees. Some GPs and private nursing homes in *Mumbai* and *Navi Mumbai* stock substantial amounts of I.V. fluids and medicines in rooms that often resemble a “mini-pharmacy.” GPs and nursing homes get I.V. fluids at 7.50 Rs (or less) per bottle of 540 ml., but they charge 29–32 Rs per bottle to their patients besides levying a 20% service charge. Irked by this practice of pharmaceutical companies selling drugs directly to GPs (cutting down the profits of pharmacists), the Retailers, Druggists, and Chemists Association (RDCA) in *Mumbai* brought the issue before the FDA in *Mumbai*. The FDA ruled that although such practice might be unethical, it was not illegal (*Times of India, Mumbai*, May 28, 1995).

Advice given by practitioners to patients diagnosed with malaria

The kind of advice given by practitioners to fever patients was highly variable. Most practitioners

¹⁸The practice of injecting a drug in addition to the main drug has also been reported from other settings in India. For example, illustrating the misuse of calcium gluconate in the South Indian context, Nichter (1996) notes that “calcium gluconate injection are administered by a number of practitioners intravenously not to correct calcium deficiencies, but to produce a “heat effect”, which is deemed a sign of power by folk health criteria” (p. 252).

cursorily explained the drug schedule and dosage to their patients and left the majority of this task to their assistant(s). Advice pertained mostly to medicine consumption and occasionally to diet and malaria prevention measures. Among the most frequent statements were: “Don’t take the medicines on an empty stomach,” “take medicines with milk,” “complete the course,” “continue previous medicines,” “don’t eat spicy, oily and hot food,” “continue normal diet,” and the like. A few practitioners claimed that they made it a point to explain the drug schedule, dosage and possible side-effects resulting from the medicine in-take to each and every patient they treated. One practitioner was particularly concerned about warning his patients beforehand of normal side-effects resulting from consumption of the medications he dispensed/prescribed. He feared that if a patient experienced side-effects like excessive nausea or vomiting and giddiness, he/she would conclude that the doctor had prescribed “bad medicine” or medicine that was “too powerful,” discontinue the treatment, and resort to another practitioner. Practitioners rarely volunteered advice to their fever patients on the preventive measures to be taken specifically against malaria. When patients asked for advice on malaria prevention, some practitioners recommended two tablets of “Reziz-Forte” or “Lariago” (popular brand names of chloroquine) every Sunday as a prophylactic, and recommended avoiding mosquito bites by using mosquito repellent coils or mats (“Tortoise” or “GoodKnight”). Some practitioners also recommended hygienic practices such as “keep the surroundings clean,” or “drink boiled water.” Only four practitioners, however, specifically said that they recommended mosquito nets to their patients. Most practitioners said that volunteering advice on prevention was futile. For example, one male practitioner in *Navi Mumbai* with an M.B.B.S. degree pointed out that most of his patients were construction laborers who lived in thatched huts in the vicinity of the construction sites where they worked. Given the poor quality of their housing, he thought it futile to advise them about protection from mosquitoes. Furthermore, with so many patients waiting in line, he lacked the motivation to devote some extra time to advise patients on malaria prevention.

Another middle-aged male practitioner from *Navi Mumbai*, with a certificate in Homeopathic medicine, expressed his sentiments about the subject as follows:

When I first started practice in this area, I used to take pains to tell my patients about malaria, but I soon realized that my advice was falling on deaf ears. Giving advice on malaria to the kind of patients who come to me is like *bhais ke age been bajane ki taraha hai* (like playing a flute to please a buffalo — i.e. a worthless act).

The practitioner’s use of a proverb to equate poor patients with some “dumb” animal typifies his use of discursive resources to undermine the intelligence of his patients. As many practitioners from *Navi Mumbai* reported, when they first started their practice, they were very concerned about the welfare of each of their patients. They took the case history of their patients in detail, offered them full prescription and sound advice on malaria prevention. However, given the intense competition for patients because of the proliferation of practitioners, they could not afford to take extra interest in their patients beyond giving them the treatment they expected. Over the years, retaining the patronage of patients and maintaining one’s popularity had become the primary concern of such practitioners. Medical histories, full prescriptions, and prevention advice had lost their significance. In *Navi Mumbai*, one-day treatment had become the name of the game.

Practitioners’ perspective on patronage of patients

During interviews with practitioners from the low-income areas of *Mumbai* and in the slums and villages of *Navi Mumbai*, practitioners commonly complained that patients in their practice locality routinely switched doctors. Such complaints did receive some support from informal interviews with patients. Doctor-switching was very common, especially in the low-income areas of both the cities.¹⁹ This trend worried practitioners who practiced in a competitive health care arena and who were eager to retain the patronage of their patients and maintain their credibility. They complained that by the time a patient had taken medications from the third practitioner, the medications given by the first practitioner would have taken effect. If the patient experienced a cure or at least symptomatic relief, he/she was mostly likely to thank the most recent practitioner who was consulted.

To find out more about this phenomenon involving lowered thresholds of tolerance for discomfort on part of patients, which has been documented elsewhere in the Indian context (cf. Nichter, 1996; Leslie, 1992), practitioners were asked: “How long does a person suffering from malaria wait after taking treatment at first resort, before looking for a different practitioner and/or a different medicine?” Practitioners held varying opinions. One-quarter of the practitioners said that patients in

¹⁹Three randomly selected patients waiting to see the practitioner in each of the 48 clinics were asked whether they had seen another practitioner before coming to the present clinic. Of the 144 patients who were asked this question, 43% acknowledged that they had seen some other practitioner, and had discontinued treatment before coming to the present clinic for the same ailment. The remaining 57% said this was their first doctor-contact for their ailment.

their practice area did not even wait until the next day. Such patients, if they had seen a practitioner in the morning and had not experienced relief that same evening, were very likely to visit another practitioner for a new prescription, or return to the same practitioner for a different prescription. Another one-quarter estimated that the local people waited only one day (24 hours) before seeing another practitioner or returning to the same one for a change in prescription. The remaining 50% believed that patients in their area waited for at least 2–3 days before changing the practitioner or the medicine if they believed that no relief was in sight. One male practitioner from *Navi Mumbai* explained the phenomenon as follows:

This is a slum area. People want a miracle cure for malaria. They want to feel better in just one day, but with malaria, is that possible? You just saw this lady patient who said “Doctor, I have been having this fever since yesterday.” Do you think I believed her? No! I am 100% sure that she has had this fever going on for the past four or five days. Did you see how her face looked? She must have gone to at least three other doctors before coming to see me.

This practitioner’s assertion that people were in search of a miracle cure was again not without basis. For adult patients who were poor, being sick and bedridden meant loss of wages, and losing a day’s wages meant further economic hardship. A “miracle cure” was symptomatic relief good enough for the patient to see himself/herself through the day. The practitioner’s allegation that the patient in question must have gone to three other doctors before coming to see him also had some basis. An analysis of the illness narrative of several respondents from the household-level study who had suffered from malaria revealed that switching doctors in search of a cure was more the norm than an exception in both cities (Kamat, 2000b). Given this situation, more research is needed looking at people’s practical reasoning, knowledge, action strategies and cultural sense in their search for cure (see Khare, 1996, p. 838), especially in epidemic-like situations such as the one described in this paper. In sum, with a large floating/migratory population, intense competition among practitioners, and the eagerness of patients for a miracle cure, none of the practitioners said that they were assured of continued loyalty/patronage of any of their patients. Not surprisingly, practitioners acquiesced to the expectations of their patients and treated them on a one-day-at-a-time basis.

Practitioners’ perspective on malaria control

The precise role of private practitioner in malaria control in both *Mumbai* and *Navi Mumbai* has never

been made explicit in any of the municipal documents. Malaria remains a non-notifiable disease under Section 421 of the Bombay Municipality Act (BMC). Thus, it is not legally incumbent upon medical practitioners to report cases to the EHO of MCGB. Pleas by the EHO for practitioners to report information regarding the malaria cases they treat have elicited a minimal response. Reasons range from a lackadaisical attitude on part of the practitioners to practical difficulties involved in adhering to the modalities set up by the MCGB for reporting malaria cases treated by private practitioners (Kakodkar, 1994). Practitioners were asked to say what they believed needed to be done to control the malaria problem in their city or in the locality where they practiced. Most practitioners spoke of “mosquito control” without going into the specifics and held the city municipality responsible for the ongoing problem. Only 12% of them, all from South *Mumbai*, explicitly named the malaria vector and its typical breeding sites, *A. stephensi* and fresh unpolluted water. For the others, the proliferation of *A. stephensi* breeding sites did not feature in their explanations about the real cause of the malaria problem in their city.

Most practitioners from both cities were openly critical about the municipalities and the existing malaria control machinery. As noted earlier, many practitioners in *Navi Mumbai* were resentful of the NMMC and its “crackdown on quacks.” One practitioner from *Navi Mumbai* lamented that the NMMC, rather than carrying out its job of maintaining cleanliness, fogging, etc., was preoccupied with harassing private doctors. NMMC officials had taken his certificates three times for verification, but were not satisfied. On two occasions, the police had come to his clinic saying that the Medical Officer for Health of NMMC had sent them to confiscate his credentials.

A few even claimed they had neither seen a single malaria surveillance worker nor witnessed the anti-malarial activities of the municipality during the entire duration of their practice. Others expressed wonder over the fact that the municipal surveillance workers were still administering only four tablets of chloroquine (single dose of 10 mg/kg) to febrile patients. Some practitioners were critical of the municipality’s exclusive reliance on chloroquine. They wondered whether chloroquine was of any good at a time when there was so much chloroquine-resistance in the environment. Overall, practitioners in both cities believed that their role was limited to the diagnosis and treatment aspect of malaria, since there was little they could do to control malaria mosquito breeding sites and transmission. They blamed the municipality for being irresponsible and their patients for being non-compliant, but accepted no responsibility for practicing bad medicine and allowing the epidemic to continue.

Discussion

The scenario in *Mumbai* and *Navi Mumbai* with respect to the role of private practitioners in the management of malaria challenges claims that patients tend to be better served by the private health care sector than the public health sector. In dealing with malaria patients, the majority of the practitioners in *Mumbai* and *Navi Mumbai* adopted diagnostic and treatment practices that were not consistent with the guidelines laid down by WHO and India's NMEP. Very few practitioners, especially those practicing in low-income areas, relied on a peripheral blood-smear test to make a diagnosis. Practitioners whose clientele was mostly the poor commonly resorted to giving one-day treatment to their febrile patients. This typically involved injectable antimalarials and broad spectrum antibiotics. Such practitioners justified their mode of diagnosis and treatment by asserting that they were responsive to the everyday contingencies of their poor patients who could not afford a blood-test or a full prescription. Moreover, practitioners trained in Ayurvedic, Homeopathic or Unani medicine treated their patients with allopathic drugs that need to be administered strictly under the supervision of an appropriately qualified medical doctor as per the Drugs and Cosmetics Act (1940), and the regulations of the Food and Drug Administration of India (FDA).

Whether the practitioners of *Mumbai* and *Navi Mumbai* were practicing "irrational" medicine because their knowledge about the dangers of sub-optimal dosages was inadequate, or whether their prescription-related decisions were a matter of economic expediency, is debatable. It is argued here that the practitioners interviewed for the study were neither oblivious of nor insensitive to the dangers involved in their modes of diagnosis, treatment and unregulated prescriptions. Yet they continued to practice medicine that was unethical and dangerous because they operated in a market that was extremely competitive and unregulated. Their profit motives and their need to retain continued patronage of patients eclipsed whatever genuine concerns they had about safety issues, medical ethics and the well-being of their patients.

As noted earlier, several practitioners claimed that during the early stages of their practice they took the trouble of listening to their patients, taking down their histories in detail, writing them full prescriptions and giving them advice on malaria prevention. With the proliferation of practitioners and the intensification of competition for patients, however, they took the path of least resistance, that of fulfilling the expectations of their patients by giving them the treatment they desired. One could argue that in providing one-day treatment to patients who were otherwise deprived of an alternate government/municipal health facility, the practitioners

of *Mumbai* and *Navi Mumbai* were indeed saving the lives of many malaria patients. This argument may seem attractive at first, particularly in *Navi Mumbai* where people had very limited access to non-private health facilities. However, in the long-term, the dangers of sub-optimal dosing and indiscriminate use of broad-spectrum antibiotics far outweigh the temporary benefits that may be accrued from a shotgun approach to treating malaria patients one-day-at-a-time.

Consider for example the fact that in a matter of three years, several practitioners in *Navi Mumbai* had started treating their patients with quinine as the drug of choice. They often prescribed it in sub-optimal dosages, augmented by antibiotics and even corticosteroids. Unlike chloroquine therapy, quinine therapy is recommended for at least 7 days. If patients were offered quinine therapy it meant that they had to spend at least 10 times more money than what they would be spending if they had been prescribed only chloroquine. As evidenced by the prescriptions and drug sales monitored at local pharmacies, patients were rarely prescribed a full prescription for quinine. Even then nearly all patients/customers purchased only part of the prescription. What is more, such patients were not closely monitored by a qualified medical practitioner, and ran the risk of succumbing to the side effects of quinine.

Given the present situation, it is unlikely that practitioners in *Mumbai* and *Navi Mumbai* will stop treating large numbers of fever cases. Most of them are also unlikely to cooperate wholeheartedly with the public health departments of the two municipalities to control the malaria problem. This is, of course, not to discount the fact that the practitioners in both cities are heterogeneous and internally differentiated. Therefore, one can expect a few notable exceptions to the general trend. As mentioned earlier, efforts made by the MCGB to solicit the cooperation of practitioners in providing crucial public health intelligence to the city's malaria surveillance officials had failed to evoke a positive response from the practitioners. Perhaps this was too much to expect from practitioners who for the most part practiced in professional isolation. In *Navi Mumbai*, efforts made by the NMMC in 1994–1995 to prevent "quacks" from practicing medicine in the city were unsuccessful. To date, there is no reliable mechanism to regulate the activities of practitioners in either *Mumbai* or *Navi Mumbai*. It is imperative that the government intervenes to regulate the activities of practitioners so as to minimize the negative effects of their unethical and dangerous practices. The interest and well-being of patients who are often poorly informed about the quality and appropriate treatment need to be protected (Newbrander & Moser, 1997b).

Activist organizations like the Medico Friend Circle (MFC), the Association for Consumer Action on Safety and Health (ACASH), Centre for Enquiry into Health

and Allied Themes (CEHAT), and Society for Public Health Awareness and Action (SPHAA) in *Mumbai* that have taken a critical stance against the private health sector are restricted in their sphere of influence. While their advocacy work has been effective in drawing the attention of the media, the public and the consumer courts to instances of medical negligence and malpractice (see Jessani et al., 1997), it remains to be seen whether the actual behavior of the private health sector will change as a result of their advocacy activities.

If the current malaria situation in *Mumbai* and *Navi Mumbai* is to improve, the municipalities of the two cities must initiate measures to strengthen their respective public health systems. If antimalaria measures such as the timely prevention and destruction of *A. stephensi* breeding sites and blocking transmission by tightening up surveillance and treatment activities are undertaken with the same rigor as in the past, many practitioners in both cities will go out of business for want of patients. Thus, as long as the public health care sector remains unresponsive to the health needs of the people, especially the poor, they will continue to seek help from the private health care sector, no matter the cost and other risks involved.²⁰

Strengthening the public health system is not an insurmountable problem for the municipalities of either *Mumbai* or *Navi Mumbai*. MCGB is the country's richest municipality with an enormous annual budget, 50% of which is devoted to the health sector. What is more, *Mumbai* has been an example par excellence for the country in having kept its malaria problem under control for over 60 years by relying almost exclusively on relevant by-laws and non-insecticidal measures for mosquito abatement (see Kamat, 2000a; Deobhankar, 1986; Covell, 1928, 1955). In the case of *Navi Mumbai*, it is crucial that the NMMC focuses its attention and resources on developing its own infrastructure to implement appropriate anti-mosquito, antimalaria measures aimed at prevention and destruction of *A. stephensi* breeding sites. In the past, precious resources have been diverted toward contracting out larviciding and fogging activities to private contractors, with disappointing results. If the same resources had been channeled toward developing a health infrastructure,

perhaps the malaria problem witnessed today would have been much less serious.

If the present trend continues, the problem of drug resistance and all that it entails with associated complications will worsen over the years. There is an urgent need to tighten the existing drug surveillance system to actively monitor and restrict the unnecessary use of drugs. The municipal health officials of both cities must find ways to persuade practitioners to follow a treatment protocol that is in accordance with the guidelines laid down by the NMEP and WHO. They also need to find ways to persuade practitioners to share with them information about the malaria patients they have treated so that a more accurate picture of the magnitude of the disease in the cities can be obtained and appropriate measures can be planned and implemented.

At the same time, the perspective of the patients also needs to be addressed. It would be worthwhile for example, to explore the scope of a consumer-focused intervention program. The present study revealed that patients were not entirely passive. Several of them exercised their agency by resisting the authority of the practitioners, refusing to accept the practitioner-recommended treatment, and even persuading practitioners to come up with a treatment plan that fitted their perceived needs and expectations. An intervention program which lays emphasis on consumer education through informing the consumer of the dangers involved in resorting to inappropriate drug therapies, and the importance of seeking appropriate treatment, may be an important first step.

No matter what other measures are taken, working with private practitioners will remain essential. They cannot be wished away or banned from practicing in the manner tried in the past by some countries (e.g. Tanzania). At the same time, to believe that private practitioners will readily participate in an antimalaria program is unrealistic. The chances are slim that practitioners of *Mumbai* and *Navi Mumbai* will be willing to alter their current practices against financial incentives, because far too much is at stake in terms of opportunity costs, time commitments and daily profits. For instance, in 1995–1996, at the peak of the malaria epidemic, some poorly qualified practitioners in *Navi Mumbai* claimed that their practice was worth between 60,000 and 100,000 Rs per month.

An initiative to introduce some form of continuing medical education for the benefit of practitioners has been proposed by some scholars (see Bhat 1999; Swan and Zwi 1997; Garg et al., 1995). Given that some practitioners in *Mumbai* and *Navi Mumbai* practice allopathic medicine without having received even minimal training in the discipline, identifying the mechanisms necessary to implement continuing medical education will be a key challenge. A few notable

²⁰ This is not to imply that people necessarily choose to go to either the public or the private health sector. In fact, utilization studies have shown that people who use the services of the public health care sector (e.g. a government hospital), end up purchasing their prescriptions from a private pharmacy. In an illness trajectory, it is not uncommon for people, at least in the Indian context to consult a government health center doctor followed by a visit to a private practitioner. This issue gets a little more complicated if one takes into consideration situations where a primary health center doctor is consulted in his private capacity after hours.

continuing medical education programs do exist in *Mumbai*. However, such efforts are typically directed toward practitioners who are already highly qualified (see Sorabjee, 1996). Interventions such as continuing medical education rest on the assumption that practitioners are predisposed toward practicing rational medicine, and that occasional support is sufficient to keep them up-to-date. This assumption needs to be problematized in the Indian context where many practitioners practice in professional isolation and those trained in non-western systems of medicine freely dispense and prescribe allopathic drugs to keep their patients satisfied.

How to deal with scores of practitioner who are neither trained in biomedicine nor legally qualified to practice allopathic medicine, but who prescribe/dispense allopathic medicines is a politically loaded issue. Would not educating or training them to enhance their therapeutic competence tantamount to legitimizing illegal practice? If so, who should take on the responsibility? Should efforts be made to spend public funds to improve private provisioning or should the same resources be used to strengthen the public health sector itself (Mills et al., 1997, p. 308)? There are no straightforward answers to such questions because the issues involved are multidimensional, complex and tend to vary depending on contextual circumstances.

Considering the current trend in the growth of the private health sector in India, an important question to ask is what can be done to remedy a situation which seems to have gone awry (Bhat, 1999; Baru, 1998; Sen & Koivusalo, 1998). The question is pressing and needs to be addressed in light of the practicality of regulating India's private health sector (Kumaranayake, 1997). Consider, for example, the situation in Ahmedabad City as described by Bhat (1999), where doctors with M.B.B.S. and M.D. degrees lacked awareness regarding the objectives of important legislation such as the India Medical Council Act, the Medical Council of India — Code of Medical Ethics, the Drugs and Cosmetics Act and the Dangerous Drugs act. They did better on awareness of COPRA. Will an intervention program aimed at educating qualified private practitioners be the logical first step in regulation? What are the odds that efforts in this direction will translate into good rational practice? Even if practitioners improved their knowledge through “academic detailing” (Lexchin, 1998; Swan & Zwi, 1997), there is no guarantee that rational medical practice will automatically ensue or that appropriate medical practice will be sustained (Brugha & Zwi, 1998; Thaver et al., 1998). Ultimately, what matters most is what practitioners do on a day-to-day basis; their actual prescribing practices, and their immediate concerns about making their practice as lucrative as possible, while retaining the patronage of their patients. If interventions are proposed that are “inexpensive,

practical, efficient, effective and sustainable over the long term” (Brugha & Zwi, 1998), it is important that “contextual circumstances” (Swan & Zwi, 1997) be adequately addressed. Empirically grounded ethnographic studies such as the one discussed in this paper can provide important insights into the micro-level socio-cultural and political milieu within which interventions must operate.

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