

Privatised family group practices in Mongolia: an initial assessment of service access

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Abstract

Mongolia is changing the way that primary care is delivered, by replacing salaried government staff with private family group practices (FGPs) paid by risk-adjusted capitation. As part of a mid-project evaluation, we surveyed a sample of FGPs in order to assess the patterns of access to care. We found that generally satisfactory services are being provided in an equitable way, and therefore that the main goals of the new model are being achieved. However, there are some concerns. Inter alia, we argue that more should be done to establish better standards of clinical practice through the distribution of protocols and illustrative pathways, and to increase the extent to which services are organised in a manner that is sensitive to informed consumers' needs. A design limitation meant that few baseline data were available, and the survey will need to be repeated if valid conclusions are to be drawn.

The new family group practice (FGP) model

The need for reform of the health care systems of eastern Europe and central Asia after 1990 has been widely reported. Inter alia, most countries chose to increase the emphasis on primary care, to promote general rather than specialist medicine, and to reform methods of payment for primary care physicians. Some successes and many difficulties of transition have been reported (Healy & Mckee 1997; Kovacic & Sosic 1998; Lember 2002; Lovkyte & Padaiga 2001; Reamy 1998; Ryan & Stephen 1996; Sheahan 1995).

Mongolia chose similar directions, which included the design and implementation of a family group practice (FGP) model. Details of its design have been reported elsewhere (Hindle et al, 1999). In outline, family doctors are losing their salaried government positions and being given assistance in establishing themselves in private group practices, with guarantees of income through risk-adjusted capitation payments from the government for a limited period. FGPs are expected to provide outreach (home) services as well as clinic-based services, although there are no direct penalties for failing to do so.

All citizens are entitled to register with the GP of their choice, and the FGPs receive income accordingly. Capitation payments are at different rates for ten classes defined by age, sex, and family income. In general, payments are in proportion to expected morbidity and mortality rates, but low-income families attract higher rates to reflect both their lower health status and the historical under-servicing of the poor.

The new model is being introduced in several stages. The first phase involved implementation of 84 FGPs in pilot areas during 1999 and 2000. The scheme was subsequently extended to other areas during 2001 and 2002. Over the next two years, a modified model will be applied to the remainder of the population, which is predominantly rural and nomadic.

At the time of writing, 237 FGPs have been established that cover 1.3 million people (56% of the Mongolian population). They employ about 940 family doctors, and almost the same number of other staff (mainly family nurses, but also a small number of other staff including part-time accountants, caretakers, and nurse assistants). On average, each FGP serves 1100 families comprising 5490 individuals.

The study reported here was part of a mid-project evaluation. The goal was better to understand the range of services being provided, and the distribution of those services among sub-populations.

Study design

A stratified random sample of 10 FGPs was selected that took account of five attributes. First, there was administrative area in which the FGP was located - defined as districts in the capital city, Ulaanbaatar (UB), and provincial capitals (Aimags) elsewhere. UB has a population of about 700,000 (26% of the total for Mongolia), and the populations of provincial capitals are typically between 20,000 and 60,000.

The second stratum was site location, split into four types of urban settlement: the business district, inner 'ger' area, apartment area or suburban ger area. Gers are traditional temporary dwellings of nomadic people, but they are also functioning as low-cost housing for poor rural people moving into urban areas in search of work. Apartment areas contain higher-cost residences of the more established urban population, although there is considerable overlap with the ger population.

The remaining strata concerned the type of accommodation in which the FGP clinic is located, time since establishment, and size (measured by number of registered clients).

The activities of the selected FGPs were then studied over seven successive days from 18 to 24 February 2002 (the study period). Seasonal effects have not been measured. However, February is close to mid-winter when FGPs are at about their peak levels of activity.

Data collection

A data collection form was developed for use by the service providers (almost always family doctors or family nurses) to record details of every encounter (occasion of service provision) during the study period. The questionnaire was largely self-coding, in the interests of efficiency as well as reduction of the biasing effect of the survey itself.

Data elements collected for all encounters concerned sociodemographic attributes of the client, time and location of the encounter, reason for visit, and type of service provided. A few other elements related only to clinic encounters or only to services provided at the client's home.

Training sessions regarding completion of the questionnaire were provided by members of the survey team. Checks were made during and after completion of the data collection in order to identify and correct if possible any obvious errors.

Results

Number of staff

On average, each FGP employed 4.1 doctors and 3.8 nurses. The ratios of doctors to nurses were almost identical across the FGPs. The range of clinical employees per FGP was from 12 (6 doctors and 6 nurses) to 6 (3 and 3).

Staff types providing services

The majority of clinic encounters (56%) involved only the doctor. 23% only involved the nurse, and the remainder (21%) involved both a doctor and a nurse. In contrast, only 33% of home encounters involved the doctor alone, 38% only the nurse, and the remainder (29%) involved both the doctor and the nurse.

The difference probably reflects the higher level of illness among visitors to the clinic. It may also reflect a tendency on the part of both clinical staff and patients to over-emphasise the need for technological responses in a clinic setting.

Across all FGPs, each doctor saw an average of 18.6 clients per day. The FGP means ranged from 12.2 to 27.8. For nurses, the overall mean was 13.5 clients per day (range 1.9 to 29.7). It follows that there are large variations in the way that tasks are allocated. The averages were generally lower than expected: assuming an 8-hour working day, doctors had 2.3 encounters per hour and nurses had 1.7 clients per hour. However, other activities need to be borne in mind, such as travel time and administrative duties.

Number of registered clients by capitation category

Figure 1 shows the number of registered clients in the sampled FGPs by capitation category. There are large variations. For example, FGP 6 serves a predominantly ger area and 86.9% of its clients are within the 'poor' classes. In contrast, FGP 5 serves a predominantly central urban apartment area and only 7.1% of its clients were categorised as poor.

There are large variations in the mean number of registered clients per doctor. The average for FGP 1 is 1736 clients per doctor, compared with 1227 in FGP 7. There are also significant differences in workload within FGPs. For example, the number of clients of each doctor in FGP 3 ranges from 1920 to 1420.

Figure 1: Distribution of registered clients by capitation category, by FGP

Capitation category		FGP (% of clients)										
		1	2	3	4	5	6	7	8	9	10	All FGPs
Age and sex	Income group											
0-1	Poor	1.4	0.7	1.0	1.3	0.2	2.0	0.8	0.9	1.2	1.5	1.2
	Not poor	1.0	0.6	0.8	0.4	1.1	0.1	0.9	1.1	1.1	0.2	0.7
1-15	Poor	16.8	11.8	15.1	19.3	2.0	48.0	9.4	11.1	16.9	30.3	19.0
	Not poor	10.4	11.2	12.5	7.2	20.4	5.2	15.5	24.5	20.0	5.5	12.8
16-49 female	Poor	15.9	27.9	28.5	20.0	2.3	11.6	10.2	7.7	12.7	20.5	15.5
	Not poor	10.0	23.4	27.7	10.6	54.7	3.9	19.3	20.7	13.8	5.4	17.8
60+	Poor	4.1	7.8	3.6	3.3	0.7	13.3	2.7	1.4	2.6	4.2	4.7
	Not poor	2.6	9.2	2.2	1.3	7.0	0.7	1.9	4.3	2.5	1.4	3.0
All other	Poor	23.7	3.2	3.6	16.6	1.9	11.8	13.8	7.3	13.0	22.6	12.6
	Not poor	12.8	4.1	5.0	19.9	9.6	3.4	25.5	21.0	16.2	8.2	12.4
All	Poor	61.8	51.5	51.8	60.5	7.1	86.9	57.4	28.5	46.4	79.2	55.1
	Not poor	36.7	48.5	48.2	39.5	92.9	13.1	42.6	71.5	53.6	20.8	44.7
FGP (total clients)												
Total population		10415	4200	6593	5645	5287	8043	6137	4492	5992	3786	60590
Total families		2144	840	1513	1129	1057	1608	1227	898	1198	757	12371

Number of encounters in the study period

Figure 2 shows the number of clients encountered by staff of the selected FGPs during the study period. The range was 295 to 687. In total, 65.6% of clients were seen at clinics, and 34.4% were seen in home visits. There was relatively little variation in this ratio across FGPs.

Figure 2: Number of encounters by location and FGP during the study period

FGP	Clinic encounters		Home encounters		Total
	Number	% total	Number	% total	
1	370	64.9	200	35.1	570
2	240	66.5	121	33.5	361
3	397	68.1	186	31.9	583
4	255	72.2	98	27.8	353
5	212	71.8	83	28.2	295
6	425	62.8	252	37.2	677
7	245	58.5	174	41.5	419
8	368	62.6	220	37.4	588
9	431	62.7	256	37.3	687
10	366	65.5	193	34.5	559
All	3309	65.6	1783	34.4	5092

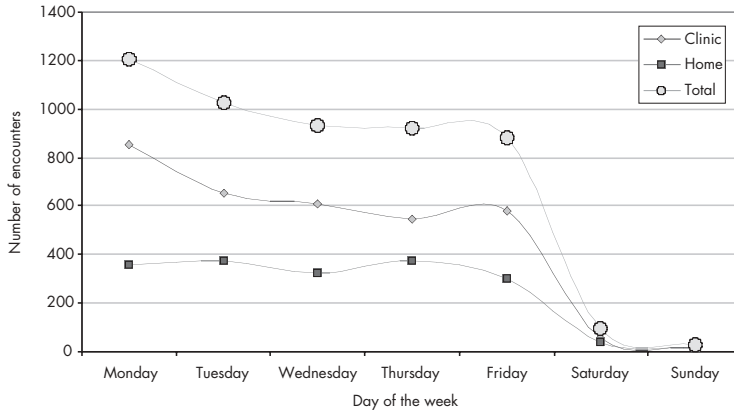
Figure 3 compares the number of encounters during the study period and the number of total registered clients for each FGP. The ratio ranged from 5.5% to 14.8%, and the mean was 8.4%. If this were typical, it might be estimated that FGPs see each of their clients an average of 4.4 times per year.

Figure 3: Proportion of registered clients having encounters during the study period

FGP	Number of registered clients	Clients served during study period	
		Number	% registered clients
1	10415	570	5.5
2	4200	361	8.6
3	6593	583	8.8
4	5645	353	6.3
5	5287	295	5.6
6	8043	677	8.4
7	6137	419	6.8
8	4492	588	13.1
9	5992	687	11.5
10	3786	559	14.8
All FGPs	60590	5092	8.4

Distribution of services by day of the week

Figure 4 shows the pattern of service volumes by day of the week. It varied little across FGPs, and there was a high degree of correlation between the daily patterns for clinic and home encounters.

Figure 4: Number of encounters by day of the week and setting

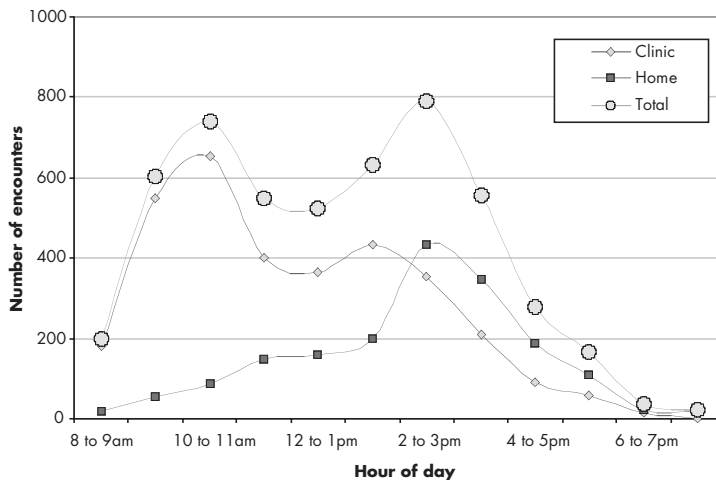
In general, clinic services were highest on Monday, and lower on each other weekday. Home encounters were similar on all weekdays, but peaked later in the week. It appears that FGP's tended to give priority to meeting the clinic workload - and clients came in the largest numbers at the start of the week.

With regard to differences between FGP's, the main variation was in the extent to which patients were seen at the weekend. The rates were very low on average, but only three of the FGP's worked on both Saturday and Sunday, four worked only on Saturday, and the remainder worked on neither day.

One of the reasons for low activity at the weekend may be old habits. Nearly all the FGP doctors were previously employed as salaried government officers, and they had become accustomed to five-day working weeks for all but emergency services. It might be claimed that the expectations of clients were the determining factor. However, the fact that only three FGP's have established regular weekend services (albeit at a lower level than on weekdays) suggests that the dominant factor is the attitude of the doctors.

Distribution of services by hour of the day

With regard to hour of service, there were again strong similarities across all FGP's. The distribution of clinic encounters was bimodal, peaking in the hours beginning at 10.30am and 2.30pm (Figure 5). Although the FGP's opened for business between 08.00am and 08.30am, few clients came to the clinics before 10.00am.

Figure 5: Distribution of encounters by hour of the day and setting

The distribution of home encounters was unimodal and peaked in the afternoon. Again, it appears that most FGPs give priority to clients who arrive at their clinic over home visits.

Only 1% of services were provided outside the normal working hours of most clients - that is, between 6pm and 08.00am the following morning. The government had advised FGPs to operate evening clinics on at least some days, but this has hardly happened. Even where evening clinics have been operated, attendance has been very low. Again, this pattern probably reflects the interaction of doctors' preferences and habits, and clients' expectations.

Outside normal hours (including weekends), there were higher numbers of males aged 16 to 49 (in comparison to patterns during normal working hours). This presumably reflects the higher proportion of males in the fulltime workforce.

Number of encounters by age and sex of client

With respect to age and sex categories, there was a high degree of correlation between the number of clients seen during the study period and the number of registered clients, after control for estimated differences in need. However, there were some notable variations.

The most important was that, with respect to clinic encounters, there was an over-representation of clients aged 1 to 15, and females aged 16 to 49. This probably reflects their greater opportunities to attend the clinic. In contrast, clients aged under one year and 60 years or older were over-represented in the home encounters.

In total, the number of encounters in both settings was reasonably well correlated with the capitation rates - which had, of course been based in part on known differences in need for primary care by age and sex. It is intended that these kinds of results, based on a larger sample of encounters, will be used in due course to update the capitation rate differentials. This matter has become more important since the survey: in June 2002, legislation was enacted that changes the source of payment from a special project fund to the national health insurance scheme (Hindle et al, 2002). Therefore the issue of appropriate pricing relative to other services covered by insurance will become more the subject of attention and debate.

Number of encounters by poverty category of client

One of the main goals of the new model is to encourage greater equity of access to primary care for disadvantaged people. As noted earlier, capitation rates were deliberately set at higher levels for clients from poor families.

Figure 6: coverage of the poor population by FGP services

FGP	Poor as % of total registered clients	Poor as % of clients serviced in study period	Ratio of registrants to service recipients
1	61.8	54.9	0.89
2	51.5	34.6	0.67
3	51.8	60	1.16
4	60.5	55.8	0.92
5	7.1	24.1	3.39
6	86.9	66.5	0.77
7	57.4	42.0	0.73
8	28.5	33.7	1.18
9	46.4	42.1	0.91
10	79.2	77.1	0.97
Mean, all FGPs	55.1	51.1	0.93

Figure 6 shows the proportions of poor clients in the registrants of each FGP, and in the encounters during the study period. The last column is a useful index number, showing the extent to which there might still be under-servicing. Overall, it is clear that concerns remain, since the short-term goal was to achieve equity (an index value of one). It is believed that the situation has improved, but no strictly comparable baseline statistics were created. This statistic should be monitored with care in future.

Reason for encounters

41.4% of patients visited the FGP for reasons of illness, 19.7% for regular check-ups and tests, 4.5% for pregnancy examinations, 6.0% for immunisations.

The most common diagnoses for clinic encounters were respiratory disease (24.82%), cardiovascular disease (16.55%), urinary tract and reproductive system illnesses (11.58%) and digestive system illnesses (9.93%). Other common diagnoses included infectious diseases (5.52%), and conditions relating to pregnancy and childbirth (8.55%).

FGP staff reported diagnoses for 54.8% of their clients, and 26.5% were reported to be healthy. No diagnosis was reported for 9.2% of the encounters, and yet various treatments were recorded including drugs prescribing and injections.

With respect to the reported diagnoses for home visits, respiratory disease (19.16%) and cardiovascular disease (39.23%) were again the most common. There was little change in the proportions of urinary tract and reproductive system illnesses (6.93%), conditions relating to pregnancy and childbirth (7.66%) and digestive system illnesses (9.12%). Unlike clinic visits, infectious diseases were infrequently diagnosed.

Diagnoses were recorded for 31.2% of the home encounters, and 31.7% were reported to be healthy. 37.1% of clients had no recorded diagnosis but were reported to have received treatments.

Types of services provided

Figure 7 lists the common services provided to patients who attended clinics. The categories are not mutually exclusive, and multiple reports were allowed for a single encounter.

Figure 7: common types of services provided to clients in the FGP clinics

Type of service provided	Number	% encounters
Consultation	2466	74.5
Examination due to illness	1371	41.4
Prescription of medicine	1358	41.0
Blood pressure examination	977	29.5
Preventive examination	651	19.7
Child growth monitoring	615	18.6
Health education training	519	15.7
Injections	383	11.6
Issuing medical documents	360	10.9
Urine test	252	7.6
Vaccinations	197	6.0
Referrals	154	4.7
Checkup of pregnant woman	150	4.5
Drugs prescribing	144	4.4
Contraceptive services	139	4.2
Hb test	114	3.5
Examination involving use of equipment	106	3.2
Cupping	106	3.2
Rehabilitation services	96	2.9
Dressing	75	2.3
Oral rehydration	44	1.3
Vaginal examination	29	0.9
Urgent medical assistance	17	0.5
Small surgery intervention	13	0.4
Gastric lavage	8	0.2
Urinary catheterisation	3	0.1
Enema	2	0.1
All other services	288	8.7

There is evidence of an encouraging emphasis on preventive health care. For example, doctors provided 15.7% of clients with health education training, 6.0% with vaccinations, and 4.2% with contraceptive services.

The pattern of service provision during home visits is shown in Figure 8. Again, the emphasis on preventive health services is encouraging. For example, the FGPs made pregnancy check-ups for 20 women, and growth check-ups for 280 children under one year old (15.7% of the total clients served).

Figure 8: common types of services provided to clients through home visits

Type of service	Number	% encounters
Consultation	1360	76.3
Blood pressure check-up	490	27.5
Prescription of medicine	315	17.7
Child growth examination	280	15.7
Injections	157	8.8
Provision of medicine per OS	86	4.8
Cleansing procedures for newborn	83	4.7
Cupping	60	3.4
Manual therapy	48	2.7
Referral	35	2
Examination involving use of equipment	34	1.9
IV transfusion	21	1.2
Dressing	21	1.2
Enema	4	0.2
Urinary catheterisation	2	0.1
All other services	256	14.4

Patient- and clinician-initiated home visits

Figure 9 shows the proportion of clinician-initiated home visits and patient-initiated home visits. Clinician-initiated home visits are dominant, and this may be argued to be encouraging - in that FGP staff are being proactive with regard to health promotion and illness prevention. However, there may be another factor that is less encouraging: the survey did not explore whether the reason for low level of patient-initiated visits might be a consequence of difficulties in contacting the FGPs, lack of awareness of rights, and so on.

Figure 9: proportions of clinician- and patient-initiated home encounters by FGP

FGP	% of home encounters initiated by FGP clinical staff	% of home encounters initiated by clients (patients or their families)
1	70.0	30.0
2	53.1	46.9
3	88.5	11.5
4	75.0	25.0
5	78.0	22.0
6	67.1	32.9
7	71.0	29.0
8	78.6	21.4
9	96.3	3.7
10	87.0	13.0
All FGPs	79.0	21.0

Services in the capital city

It is frequently argued that services in the capital city, UB, are better than elsewhere, and in many respects this is demonstrably the case. We therefore made a range of comparisons with respect to the new FGP model, and found there were in fact relatively few differences between the sampled FGPs in UB and in the provincial capitals. However, two significant differences were observed that are worth noting.

First, the Aimag FGPs saw 12.9% of their registered clients during the study period, compared with 7.0% for the UB FGPs. The difference was similar for both clinic and home encounters. It might therefore be concluded that access to services is better in Aimags. However, there are several confounding factors. In particular, there may be differences in health status, and residents of UB clearly have a wider range of options to the use of FGP services.

Second, in UB, doctors by themselves saw a much greater proportion of clinic clients than did nurses by themselves (63.5% of encounters by doctor alone, compared with only 19.0% by nurse alone). For clinic encounters in the Aimag FGPs, the corresponding statistics were 42.4% by doctor alone, and 30.2% by nurse alone.

For home visits by UB FGPs, 43.8% of encounters were by doctor alone, compared with only 13.4% by nurse alone. For home encounters in the Aimag FGPs, the corresponding statistics were 28.9% by doctor alone, and 54.1% by nurse alone. In total, UB doctors see more patients by themselves, and the nurses' role appears to be less significant in terms of direct patient care in comparison to the Aimags. It has been suggested that the main reason may be a higher expectation among UB residents that they will be treated by a doctor. However, there is no convincing explanation, and more investigation is needed.

Discussion

One weakness specific to the survey reported here is that there is no basis for judging the adequacy of access and service provision for clients who did not have encounters during the study period. A more general weakness is that few relevant baseline data were available because the FGP project failed to establish a suitable experimental design with pre- and post-intervention surveys as well as control sites. At best, there were pre-intervention measures only at the level of outputs. This has been a common error in the transitional economies (Grielen, Boerma & Groenewegen 2000) but it is nevertheless of concern.

It has been argued that the new FGP model was obviously sound and the problems needed to be addressed without delay, but these plausible reasons might sound like rationalisations to the extent that they were hardly mentioned during the design phase. This said, the cultural determinants should not be underestimated. Like many other countries of the former Soviet Bloc, Mongolian statistics before 1990 were directed at showing everything was fine, rather than at discovering and publicising weaknesses in the interests of continuous improvement. This view has not yet died.

However, the available evidence suggests that the new model is working effectively in many respects. New businesses have been established and are being operated in a stable manner by people who, for the most part, had no previous experience in this regard. Most of the target population appear to be well aware of and are making use of the new services. Some attempts have been made to adjust opening hours to the varying needs of clients, and an admirably high level of home encounters is taking place. There is also a highly satisfactory emphasis on health promotion and illness prevention.

Many methods of care are being applied that were rarely used under previous arrangements for primary care. For example, over half of the clients who attended a clinic were examined by ophthalmoscope, rhinoscope and otoscope, and urine tests and Hb tests were used in about the expected proportions. There were expected levels of assessment of pregnant women by the use of scales, pelvimeter, band meter and fertility stethoscope.

Groups most at risk (the poor, young children, elderly people and women of child-bearing age) are being paid appropriate attention. For example, around half of the children who visited a clinic during the survey period were measured with appropriate growth tools. In short, the main goals of the risk-adjusted capitation model seem to be being achieved to a satisfactory degree.

However, there are some clear reasons for concern. One is that the rate of consultations (for example, 2.3 doctor encounters per hour) may be too low. This may be a factor in the long waiting times that the study team observed at some FGPs. The worst period was on Monday morning and the queues typically remained until at least 3pm.

A more obvious operational weakness is that patients arrive in the largest numbers at about the same times - mainly at around 9am and 2pm each day. This probably reflects the concern of many patients that, if they arrive closer to lunchtime or to close of business in the evening, the FGP staff will simply choose not to serve them if it would mean working after normal hours. This was certainly the common situation under the old model - and is still the norm at hospital outpatient clinics. This kind of imbalance between demand and supply is inefficient as well as inconvenient.

We have already referred to our concern about the possibility of unnecessary treatments. This derives in part from the largely circumstantial evidence from our survey - such as the large number of patients who were given treatments in the absence of any recorded diagnosis. However, it also reflects the widely reported view that clinical practice in Mongolia has long involved excessive use of medications and injections.

Conclusions

Our sample survey suggests that the radical changes to primary health care are broadly meeting expectations. This is encouraging, given the evidence from elsewhere (and particularly from the transitional economies) that significant changes in health care are likely to be problematic if they require a re-think of national, political, and professional cultures.

However, several steps might be considered in order to improve performance. First, expectations regarding range and method of delivery of services need to be better specified. Inter alia, this should include the distribution of illustrative clinical pathways, of which some should cover referral processes - and therefore encourage better continuity of care between primary and other levels of care. There is also a need for the establishment of standards and guidelines regarding the extent to which the services are preventive rather than reactive, and home- rather than clinic-based.

These kinds of developments should be linked to a formal process of continuing evaluation of service quality and outcomes. Inter alia, more needs to be done to monitor and manage service provision, including the kinds of treatments that have been reported in other studies to be frequently unnecessary.

Second, a better system of maintenance and use of registration databases is needed. It was clear that local government offices did not have easy access to analytical statistics that might enable them to be more proactive - for example, in terms of monitoring the equity of access of services for the poor and other subgroups. Perhaps more important, some of them appear to be unclear about their responsibilities for monitoring, or of ways that this might best be undertaken. This might in part be a consequence of failing adequately to involve provincial and district health authorities in the initial design work.

Third, the FGPs need to be better able to measure and then respond to their clients' expectations of service access. This includes encouraging their clients to propose opening hours that suit them, developing appointment systems, and ensuring that clients' needs can be better met through improved scheduling of staff availability. Our survey showed that some FGPs are already attempting to be more responsive to the customers' needs, but that old habits die hard unless there are significant incentives to contemplate change.

Fourth, the errors of failing to establish a basis for comparison need to be avoided in future. Results of the kind described here will be of limited value unless the measures are repeated in future and replicated elsewhere.

Finally, the opportunity should be taken to build on this survey. One obvious opportunity is to incorporate measures of health status, and we are already preparing to make use of the SF-36 for this purpose. Important matters will remain in doubt until this occurs. In particular, equity of access for poor and non-poor will be a matter of debate until their differences in needs are taken into account.

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