

# Public Report on Health

## Some Key Findings and Policy Recommendations

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A bottom-up view of the health conditions and services in six states – three performing and three not-so-well performing ones – was arrived at through a study by a multidisciplinary team with varied experiences in health research. This paper presents the results of a Public Report on Health that was initiated in 2005 to understand public health issues for people from diverse backgrounds living in different region-specific contexts. The findings, which have policy implications, have been used to analyse the ongoing official attempts to deal with the various challenges thrown up by the National Rural Health Mission.

The authors are members of the team that guided the “Public Report on Health” project. The Ethics Committee of the project is comprised of R N Gupta (chairperson), Ratna Sudarshan, Somen Chakrabarty, Amar Jesani, Kamla Ganesh and Narayan Banerjee (initial period). State partners: Vaanmuhil (Tamil Nadu), Loyala College (Tamil Nadu), Cehat (Maharashtra), HPVHA (Himachal Pradesh), Sutra (Himachal Pradesh), Debate (Madhya Pradesh), Sahmat (Madhya Pradesh), Sahyog Legal (Uttar Pradesh), Agramee (Orissa), and Navakrushna Institute of Development Studies (Orissa). Contributions of Radha Holla Bhar, Soma Sen, Indira Chakravarthy, Balwant Mehta and Nidhi Mehta in this endeavour are acknowledged. Special acknowledgements to the Board, administration and staff of the Council for Social Development, New Delhi where the project was housed. Funding from IDRC, Canada.

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The idea of undertaking a “Public Report on Health” (PROH) emerged from a study on education, “Public Report on Basic Education” (PROBE), that was carried out by a group of scholars and activists from 1996 to 1999. Seeing its influence on public policy as an advocacy document, some members involved with PROBE<sup>1</sup> initiated the process to discuss the desirability and feasibility of a similar report on health. A national level study, the PROH was initiated in mid-2005 by a team with members from different disciplinary backgrounds and varied experiences in health research.

It was designed to understand public health issues for people from diverse backgrounds living in different region-specific contexts. States were selected purposively to capture a diversity of situations from better-performing states and not-so-well performing states. Based on these considerations, six states – the better-performing states of Tamil Nadu (TN), Maharashtra (MH) and Himachal Pradesh (HP) (better developed-BD) and the not-so-well performing states of Madhya Pradesh (MP), Uttar Pradesh (UP) and Orissa (OR) (less developed-LD) – were selected.

From each of the selected states, two districts were chosen on the basis of specific indicators<sup>2</sup> – one district relatively better performing and the other not so well performing (Table 1). The choice of districts was also guided by the principle of diversity. An additional consideration was that they reflect contrasting agro-economic zones in the state. Data was collected in three phases (Table 2, p 44).

Based on the findings from the study, following are some of the key issues that emerged which would need to be addressed in policy planning in health.

**Location and Access:** Location of a village and availability of transport determine access to the various resources including health services. The more developed a state, better were the infrastructure facilities. In the six-village study, the TN village

**Table 1: States and Districts Selected for the Study**

State	District	
	Better Developed *	Less Developed **
Tamil Nadu	Kancheepuram	Virudunagar
Maharashtra	Pune	Jalna
Himachal Pradesh	Una	Chamba
Madhya Pradesh	Hoshangabad	Shahdol
Uttar Pradesh	Meerut	Allahabad
Orissa	Dhenkanal	Rayagada

\* Referred in text as BD.

\*\* Referred in text as LD.

**Table 2: Phases of the Study**

Phase	Duration	Sampling	Sample Size	Data Type	Referred in Text as
Preparatory phase	3 months (August 2005 to Dec 2005)	Purposive to reflect diversity of situation, development and agro-economic zones	Six states (TN, MH, HP, MP, UP and OR) and 12 districts	<ul style="list-style-type: none"> <li>• Secondary data</li> <li>• Literature survey</li> <li>• Theme papers</li> </ul>	
Situation study	3 months (Dec 2005 to June 2006)	Two villages per district selected purposively from 15 villages (with population 1,000) selected randomly from the 2001 Census list	24 villages	<ul style="list-style-type: none"> <li>• Secondary data – state, district and village level</li> <li>• Primary data (qualitative)</li> </ul>	24-village study
Intensive village study	One year (Aug 2006 to Dec 2007 – in HP till May 2008)	One village from the two villages in situation study, selected purposively from the not-so-well-performing district	Six villages: all households in village –1,521 households; all local health providers, both formal and informal, public and private	<ul style="list-style-type: none"> <li>• Primary data (both quantitative and qualitative);</li> <li>• Secondary data</li> </ul>	Six-village study
Quantitative study	One time, cross-sectional (Aug 2008 to Feb 2009)  (Jan 2009 to Sept 2009)	Five villages per district selected randomly from villages with population between 500 and 4,000 from the 2001 Census list	60 villages: 40 households from each village – circular systematic with a random start, i.e., a total of 200 households per district, 2,400 in 12 districts. Health providers in the public sector from the sub-centre level to the district level	<ul style="list-style-type: none"> <li>• Primary data household (quantitative)</li> <li>• Primary data health providers (qualitative)</li> </ul>	60-village study

was the only one that had both public and private transport on a regular basis with good, all-weather tar roads. MH, HP and MP villages had only private transport and the access was through a dirt or *kaccha* road with varying seasonal accessibility. In the MH village, however, public transport was available by the end of the study period. The HP village, although situated on the main motorable road, had problems of accessibility because of blockage due to landslides which had increased in the recent years, ironically, as a consequence of road building and other construction activities. The OR village had no transport, public or private.

Inaccessibility was a major reason for the high case fatality in the outbreak of cholera in the OR study area which occurred during the study period as the villages were cut off by rivers and streams in full spate.

Spatial location of social groups in a village also determined their access to resources. A clear geographical segregation was discerned in all the villages with the upper castes inhabiting the central part of the village and the lower castes in settlements at the periphery of the village. This often led to the lower castes and other marginalised groups (Muslims, Christians) being rendered invisible. Moreover almost all the facilities, such as the health centre (when present), ration shop, post office, the panchayat bhavan, post office, etc, were located in the central area where the upper castes resided and were at times inaccessible to the lower castes.

In the TN village (six-village study) for instance, the “frontier” areas of the village were occupied by the scheduled castes (scs) population whereas the upper castes resided in the central part of the village. In the MP village, the tribal households were clustered in a hamlet separated from the main village by a stretch of paddy fields. During the initial part of the study (24-village study), while the village leaders from the main village acknowledged the existence of this hamlet they refused to admit to the study team that it was part of the gram panchayat. The consequence of such

caste-based spatial location is that the visits by the health providers may get confined to the main part of the village where the upper castes reside.

Newer explanations supplanted the older one of untouchability to justify segregation. In the MH village, the Muslims and Christians, the latter converts from the sc population, were located in the peripheral parts of the village, and the upper castes put forth newer “rational” reasons such as vegetarianism to justify social prejudices and explain physical segregation and discrimination.

A recent phenomenon is the formation of gram panchayats composed almost exclusively of one specific caste group, thereby institutionalising geographical segregation. This was observed in both the TN and MH villages, and was perceived as a positive move by both the castes. The political implications of this aspect need to be assessed.

**Social Composition:** In this study, caste has been used as an analytical category for analysing both the health status and health-seeking behaviour. All the study villages, even those in predominantly tribal areas are heterogeneous. They comprise more than one social group that has evolved ways of coexistence despite their specific identities, culture and ways of living. This coexistence is sometimes one of cooperation, and at others fraught with tensions which may simmer to erupt occasionally into violence. Such tensions could be discerned, for instance, in the telling of the history of the formation of the village with the different social groups making differing claims as to who were the first settlers to support their position of supremacy in the village. In both the six-village and 24-village study, caste (tribe) was the primary identity which dictated the place in the village hierarchy.

Where religious identity got intermixed with caste identity, as in the MH village, the religious identity was imposed by the upper caste as the primary one on the scs who had converted; and they were ranked lower than the unconverted Hindu sc

households. In the TN village, on the other hand, the caste hierarchy was retained within the Christian community which continued to practise segregation according to their caste location. In the predominantly tribal village of OR, the scheduled tribes (STs) practised discrimination against the SCs.

The earlier blatant forms of discrimination and untouchability were being practised openly by the few brahmin families in the UP study village. While this was said to be absent in the other villages, in the village in Kancheepuram district (BD district) of TN, the study team observed the practice of two-tumblers system<sup>3</sup> in the local teashop in the upper caste part of the village. In all the villages, there was varying levels of discrimination in terms of accepting food, eating together, although the men were allowed more freedom than women in breaking such taboos. But when it came to marriage, the caste barriers were said to be insurmountable. Exchange and sharing of roti (food) was an unstated taboo, exchange of *beti* (daughter) was considered unthinkable.

In the case of the tribal communities of central India, the state appeared to not recognise their distinct belief system which includes the worship of nature. The state was obliterating their tribal identity as animists by imposing on them, albeit by default, the dominant religious identity of Hinduism.<sup>4</sup> However, with sanskritisation, some households had begun to include the Hindu gods as well in their worship.

Political power was not linked to absolute numbers but to the caste and economic location of the caste group. Panchayat elections were seen as a way of gaining political power by those in the lower category. In all the study villages in TN, the forward castes (FCs) were absent as they had all moved out. Now the dominant caste is the Other Backward Classes (OBCs) and their political muscle can be observed in TN politics, particularly in electoral politics.

While within a village the caste location determined the economic status and political power, and therefore the health status, between states, it was their location within a particular state that determined the health status of the specific social group. Hence the SC population, while lower in the social hierarchy in whichever village they were found in, healthwise did not perform uniformly as one entity. For instance, the SC population in the TN village was very different from the SC population in the MH, UP and OR villages, in terms of health indicators and accessing health services. Similarly, the ST population in the OR study villages was different from that in the MP villages; in the former, they were the dominant social group whereas in the latter they were extremely poor and marginalised, which was reflected in their poor health status. While the MH village and HP village both had Muslim households, those living in the MH village were below poverty line (BPL) families with poor health whereas those in HP were fairly wealthy, higher up in the social hierarchy and enjoyed better health status.

Caste identity also becomes important in accessing resources as varied as health services, education, anganwadi, the public distribution system (PDS), land, employment opportunities and at times impinges on the caste identity of the

service providers and the recipient. Caste discrimination was reported in terms of all the above-mentioned services from almost all the study villages. In some instances, as in the villages of the BD district of TN, separate anganwadis were present in the upper and lower caste localities which were a practical solution to this problem without resolving the issue however.

Large regional differences in social groups (caste, religion) have implications for presentation of data. Aggregate data would distort the reality of a specific social group's status which would reflect both their identity as a specific caste group as well as their location in the region/state with its particular history and social policies.

### Gender

The sex ratio, an indicator said to reflect the status of women, was low in all the villages except for the MP and OR village (six-villages study), and the LD districts of TN and OR where it crossed 1,000 (60-villages study). A sex ratio which is more than 1,000 is said to indicate a less discriminatory attitude towards the female population. The study findings however suggest that there could be other explanations; specifically, it could be the consequence of the differential mortality experiences in the male/female population, particularly in the adult age group which disfavors the males.

This is borne out by the study. Women living without spouses form an important category in all the study villages of the six-villages study, a major reason being widowhood. The proportion of ever married women whose husbands are dead ranged from 18% in TN, 16% in MH, between 12 and 14% in HP, MP and UP villages. The lowest is in OR at 9% (six-villages study). In comparison, widowhood among the ever married males was negligible in all the study villages with the exception of MP where it was close to 7%. This indicates excess death in adult male population in all the study villages and in addition, in the MP village an excess death in the adult female population as well.

In TN, MH and HP, alcoholism was said to be the major cause of death among the males. In the UP village, it was occupation-related injuries such as silicosis and tuberculosis that led to a larger number of men dying.

Desertion, divorce/separation were other reasons for women living without their spouses, this too being the highest in TN. This would also lead to a higher sex ratio in this age group in these villages. Again alcoholism was indicted as the major cause; in the case of TN, bigamy led to desertion and divorce/separation. In MH dowry was considered a major cause for divorce/separation and indebtedness. Among the ever married males, this category was negligible with the exception of MP.

The consequence is that, with the exception of HP, there were more women who were living alone than men as a single member household, with the highest proportion in the TN village. The reason for the exception in HP was because women are traditionally entitled to a share of both the natal and husband's property. This could perhaps explain the lower number of widows living alone in HP as they become part of another

household. In contrast to this, the situation of such women in the other villages, especially when they lived alone, was pitiable due to their very low economic status and social standing. Widowhood, desertion and separation with little social support have an important bearing on the economic, physical and emotional well-being of these women. In situations where they have to bring up children as single parents, it is worse for all concerned.

The juvenile sex ratio (0-6 years) is generally taken as a proxy for sex ratio at birth, and a low ratio indicating sex selective practices such as infanticide or selective abortions. The juvenile sex ratio was the lowest (less than 800) in the villages of Meerut district in the 24-villages, six-villages and 60-villages study. While caution must be exercised because of the small numbers, the sex ratio at 0-4 years showed a striking pattern in the six-villages study. The TN, MH and HP villages (all from the less developed districts of better performing states) showed an extremely low sex ratio unfavourable to girls. The MP, UP and OR villages (all from the less developed districts of low-performing states) showed a high sex ratio favouring the girls. One likely explanation could be that the MP, UP and OR study villages are isolated from urban areas with little access to health facilities and therefore to sex selection technologies. It is likely that the geographical isolation and lack of health facilities could be playing a role, in terms of lack of information regarding the Pre-Natal Diagnostic Techniques (PNDT) Act

and access to such technologies. In the case of the OR villages, the predominant tribal population, said to be relatively less patriarchal, could be an additional reason.

In the TN villages, the previously rampant practice of female infanticide among certain caste groups was said to be receding, but its place could now have been taken by the "more civilised, modern" sex determination technologies; the study reports a high rate of induced abortion, spontaneous abortion and still births from this village, at least a proportion of which could be linked to sex selective abortions. The HP village reported the highest rate of still births, a proportion of which could in fact be late abortions following sex determination. During the 24-villages study there were reports that the women's self-help groups in villages of the BD district of MH gave loans to access sex selection technologies. Sex selection was said to be practised by the relatively affluent, upper castes in Meerut district (24-villages study).

The sex ratio varied across social groups (caste and religion), but no uniform pattern could be discerned. The broad variations seen in this study indicate a differing fertility and mortality experience among the social groups; in addition there was regional, district and even block-wise differences.

**Livelihood and Income:** The assessment of the economic status of the household is important as it is directly connected to nutritional status and the overall health status and determines



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**Important Deadlines**

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access to medical care. In the six-villages study, agriculture continues to be the main source of livelihood with the exception of the TN and the UP villages. In the TN villages, even though agriculture is not the main fount of livelihood, it is still an important source. In the UP villages, agriculture is practised by a few families from the upper castes and stone quarrying forms the main source of livelihood for the majority of the households.

In an agrarian economy, landholding becomes an important source of income as well as a capital asset. The pattern of landholding varied widely across the villages; the disparity in landholding was the maximum in MH and the least in HP. There was a high proportion of landlessness in TN and UP, the two states from the two ends of the development spectrum. In the six-villages study, there was a clear association between landlessness and social category. For instance, in TN more than four-fifths of the SC households had no land, whereas, only a little more than half of the backward castes (BCs) households were without land. In HP, one-fourth of the ST households were landless, in comparison to only 10% of the FCs.

One common finding across the six IVS villages was the oft-repeated statement by the cultivators that agriculture was not remunerative and that the cost of production outweighed the income from land. There was also a growing concern about climate changes with its unpredictable seasons. This had an unexpected impact on one of the study villages. This village from the LD district of TN, known for its low rainfall, received unprecedented heavy rains during the study period with the result that there was a sudden increase in agricultural output; on the other hand the HP village went through a period of drought during the study period.

On the basis of detailed information on the cost of cultivation, calculations were made to work out the net income from several crops across the six villages. The results showed that for most of the crops the net income was negligible or non-existent. For instance, in TN the expenditure per acre to grow chillies was Rs 13,550 and the net income was Rs 9,550 only. In the MH village, the net income from cotton ranged from Rs 3,150 to Rs 10,000 per acre depending on the acreage cultivated and whether labour was hired or family labour was used. In HP, there was no net income from maize and wheat, the two major crops, but vegetables (cash crop) fetched a net income of Rs 4,000 to Rs 10,000 per acre. In MP, the net income from wheat ranged from Rs 3,500 to Rs 6,400. In UP, even though agriculture was not the major economic activity, the net income from paddy was around Rs 8,000 per acre. In OR, the maximum net income, even when family labour was used, was around Rs 7,500 per acre.

To provide a scale, the remuneration from one acre of land from a single crop for which much labour has to be expended over many months, is often less than the monthly salary of an auxiliary nurse midwife (ANM), who is the lowest placed health functionary in the healthcare system.

Thus the life of the tiller of land is constantly beset with financial need and worries. To a question on changes in the household's circumstances in the three months following the

previous visit, the answer was that there was an increase in stress/worry and anxiety and problems ranged from 80% in MH and MP to 40% in TN in the six-villages study.

Where cattle formed an important source of income, a special problem that came up during the study was the cattle disease outbreaks with high case fatalities. A large number was reported to have died within a short period in MH and TN (24-villages study) due to unexplained causes. Veterinary care is becoming expensive with the vets charging amounts equal to a medical practitioner. This is an area where the accredited social health activists (ASHAs) could be trained to provide services at the village level.

Occupational hazards have emerged as a source of major ill health in the study villages. In TN, it is the matchmaking and fireworks industries as well as cotton mills which provide major non-agricultural employment. In addition to the impact on workers' health, there is the problem of increased fluoride contamination of groundwater. In UP, it is the stone and silica mines which lead to respiratory illnesses including silicosis and tuberculosis among the workers.

Development projects and the demands of the corporate sector are becoming a major threat to the livelihood of the people in several of the study villages. In MH land was acquired for highways, in HP for hydroelectric power, in TN and OR for setting up multinational companies. The MP and UP villages had not been approached so far as they were located in resource poor areas.

**Food:** HP and MH were the only states where hunger was not reported as a major problem. In all the other states, households having sufficient to eat through the year ranged from 27% in the TN villages in the LD district to 70% in the other districts (60-villages study).

The body mass index (BMI) of the adults in the villages of the six-villages study shows that even in the better performing state of TN, 70% of the adult population is undernourished, and even if the non-response is added to the better nourished category (best scenario), the percentage of the poorly nourished with a BMI of less than 18.5 is more than 50%. The UP village on the other hand shows almost the entire population to be undernourished and even in the best scenario, the percentage of undernourished would be more than 75%.

TN is the only state which has universal access to PDS with more than 90% of the households possessing a ration card. In the other states (and districts), the proportion possessing a card varied from 10% to 70%. However, the proportion of households with a ration card in the LD districts was higher than the BD districts in all the states and the proportion among the SC and ST was higher than the other caste groups in more or less all the districts.

The allocation of commodities and their quantities differed from state to state but in no case was it sufficient to meet a family's needs. Moreover, possession of a ration card did not mean that the household received the allocated commodities. For instance, in one of the study villages in TN, there were 420 ration card-holders but 338 of them received only kerosene.

In UP, on the other hand, the proportion possessing ration cards was low and it was the affluent who were the beneficiaries. The other problems were that the grains supplied by the shops were not the ones eaten by the local people (wheat in a jowar eating rural MH); the stock of grain smelt bad or was infested; there was corruption; and the poor were unable to purchase in bulk.

While almost all the surveyed villages had an anganwadi, in most of them they functioned against heavy odds. The anganwadi in any case caters to only children in the age group of three to five years, and therefore would not have any serious impact on childhood malnutrition as it is children below three years who are at risk.

The aim of the mid-day meal scheme in schools is to increase school admissions and retain the children and not to improve their nutritional status. However, where it functions specifically in TN, it may add to the food intake of the school going children.

The high levels of undernourishment in the adult population in the study villages suggest a great deal of food insecurity in these villages. State interventions do not seem to compensate for the low food intake. Poverty seems to be the determining factor here. The levels of poverty can be seen from the fact that a high proportion of the adult population is engaged in daily wage labour; half or more than half of the age group 15-59 years was employed as daily wage labour in OR (61.5%), MP (56.6%) and TN (44.9%) (six-villages study). In the age group of 60+ years, 40% in TN, and 30% in MP, UP and OR, were employed as daily wage labour; in MH it was 14% and the lowest was in HP at 4%. Apart from indicating a low economic status, this also means excess of energy expenditure in heavy work. This high level of energy expenditure in heavy labour continues even in old age. It is important to note that women without spouses who form single member households form a sizeable population in the old age group.

Cash cropping and cultivating for the market, have become the norm in TN, MH and HP with vegetable and cotton replacing food grains. In all the villages, cultivation of hardy grains such as millets, corn, and oilseeds have come down drastically. This is found only in areas which depend exclusively on rainfall for cultivation. Consumption of rice and wheat are replacing the wide variety of grains such as *kodo*, *kutki*, *ragi* and *kambu*. Changing cropping and food intake patterns, particularly food composition, also seem to have a serious impact on the nutritional state of more than half the population in rural areas.

## Water and Sanitation

**(a) Potable Water Availability:** In all the 24-villages study, potable water for drinking was found to be a problem of varying intensity, irrespective of which state or district they are situated in. While in the villages from the developed states and districts there are overhead tanks supplying water in a regulated manner, in the other villages people depend on wells and handpumps. While water scarcity has been an issue

for a considerable period of time in some villages, in the others it is an emerging phenomenon. For instance, people in the MH study village situated on the banks of a tributary of the Godavari, said that in the "earlier" times the river was broad and deep and could be crossed only by boat. But now, with the building of the dam upstream, the riverbed had dried as also the water in the wells and handpumps because of the lowering of the groundwater level. The problem is magnified due to illegal sand mining. The HP village is another instance where even though water is being supplied by the state, it is hard and brackish as compared to the free flowing streams. Scarcity is being experienced by all due to the falling groundwater levels linked to the several hydroelectric projects.

With the advent of handpumps in almost all the villages, the traditional wells and tanks have reached a state of disuse and decay due to lack of maintenance. Previously, such tasks used to be carried out under the supervision of traditional leaders but now with the entry of the state as a major decision-maker, the old order has given way and resulted in lack of community involvement.

In villages where cattle are an important source of livelihood, there was additional need for potable water. In times of water scarcity, the people were forced to sell-off their cattle.

Fetching water for all of the family's needs is the task of the women of the household in all the villages. Wherever there was scarcity, either through the year or seasonally, the anxiety was theirs alone.

The newly enforced public health initiative of building toilets by rural households appears to be presenting the threat of orofaecal contamination of water. Such shallow latrines, built near the houses and water source have a great potential for contaminating groundwater and for spreading water borne diseases.

The people in TN (six-villages study) faced a specific problem of high fluoride content of groundwater. In fact in 2001, the TN government had identified Virudhunagar district as one of the eight fluorosis endemic districts in the state.<sup>5</sup> The village had not been provided with piped water supply to deal with this problem, despite several petitions.

**(b) Sanitation:** In the six-villages study with the exception of HP where 41% of the families had a toilet in their homes, defecation in the open was the norm. The government's attempt at building community latrines in the TN villages at considerable cost has failed both because of lack of adequate water and because the task of maintaining toilets (and carrying out other jobs such as garbage disposal) have been traditionally assigned to the people of a particular caste who belong to the lower most rung of the caste hierarchy. This has resulted in the upper castes using such facilities but not involving themselves in maintaining their cleanliness.

The new public health initiative which uses several forms of coercion to get people to build latrines in rural areas has only resulted in increasing their hostility. If at all the latrines are built, it is not for use but for fulfilling the target to avert penalties on the individual household and the village. Institutions such as schools and anganwadi centres have not been able to

effectively change the children's toilet habits. Even the current strategy of shaming people into building and using latrines has not had the desired impact. The question that needs to be asked is why is there such great resistance among the rural populace to these moves? Lack of adequate water and the increase in workload of women of the household who would need to carry more water can only be a part of the explanation. A more understandable reason is that in a rural setting, it is culturally unacceptable to have a toilet near a dwelling place.

**Water for Irrigation:** While little attempts have been made to increase irrigation possibilities in the study villages, there is a greater tendency to divert water resources to meet industrial needs and those of an increasing urban population. For instance, among the industries coming up in Kancheepuram district (BD district of TN) are water-intensive ones like automobiles, food processing, textiles, pharmaceuticals and the hi-tech electronic industry. Shortage of water in the district has led farmers of the study villages to harvest just once a year, where earlier they were taking two crops of paddy. This affects both the incomes derived from agriculture, including those of the agricultural labourers, and their food security. The building of a dam on the Dudhna River affected the MH village and the proposed hydroelectric projects in the HP village have serious consequences for agriculture in the area. While such projects are meant to have an impact on the economy of the area and its growth rate, these have resulted in the impoverishment of the local populace. Further, such "developmental" projects do not take the needs or consent of the local population into account and are seen as impositions from outside. When there are local protests they are violently dealt with as in the case of the OR villages.

### Birth Rate

With the exception of UP and OR, all the other states and districts have recorded a birth rate lower than the national average. The TN villages recorded the lowest which was below replacement level and it appears that there has indeed been a drastic fall in births not only in this village but in the taluka as well. This was corroborated by the doctors at the primary health centre (PHC) and taluka-level hospitals. Questions had been raised at the anganwadi workers' meeting and at the staff meeting at the PHC about the fall in birth rate. It was reported during the study that due to pressure from the district-level authorities to show high birth rates, there was an increasing attempt to report a higher conception rate and a high abortion rate to explain the low birth rate.

The increasing age at marriage and high acceptance of terminal methods of contraception at low fertility levels have been cited as reasons for the low birth rates. In the Tamil Nadu study village, 16% of the males above the age of 22+ years were unmarried at the time of the study. While the numbers are too small, it appears that the caste differentials in birth rates that are present in the other states may not be so in TN indicating that the fertility behaviour of the different social groups is not determined by their caste location alone.

The very low birth rate in the study area in TN needs to be investigated. This has serious implications due to its economic and political consequences. If the rates are indeed falling at an alarming rate, then an easing of the family planning targets should be considered.

The study villages with low birth rates are also the ones with low juvenile sex ratios. While falling birth rates is in keeping with the state's demographic goals, it needs to be seen whether this is at the cost of a reduction in female births through sex determination technologies and other means. And if it is indeed so, the demographic desirability of low birth rates achieved at the cost of reducing female births needs to be examined.

### Mortality

The crude death rate (CDR) was the highest in the TN and OR villages, the two ends of the spectrum (six-villages study). However this finding is based on very small numbers and needs to be treated with caution. In July-August 2007, during the six-villages study, there was an outbreak of cholera in the OR village area with a high number of deaths. Initially the administration refused to accept that there was a cholera outbreak and much time was thus lost. The situation was complicated since the villages had become inaccessible as they were cut-off by rivers and streams in full spate.

High infant death continues to be a serious problem. Qualitative data during the 24-village study showed that in one of the study villages in OR, five new born babies (three girls and two boys) had died in the month prior to the study. In the data available for the year before baseline, there was a high number of deaths (three boys and three girls) reported among infants from the MH village (six-village study), two of which were hospital deliveries and four home deliveries. In the 60-village study, high infant death was reported from HP (22% – LD district), MP (14% – BD district), and MH (16% – LD district) for boys; the high infant deaths for girls were in the LD district of MH (25%).

### Morbidity

That most of the illnesses in rural areas are simple and can be treated by a village-level worker at the village is a long held notion in rural health.

The data in this study would question this assumption as it shows serious morbidities in substantial proportion of the people in all the study villages of the six-villages study.<sup>6</sup> The rates of illnesses reported on the day of survey ranged from 15% in HP to 50% in the UP village in the six-villages study. TN and MP reported the second highest rate at approximately 30%. The OR village reported the highest proportion (36%), followed by TN (14%) of persons not taking any treatment for reported illnesses on the day of the survey. In all the other villages, only a very small proportion of people reported not taking any treatment for their illnesses. In OR, it reflects the near absence of medical facilities, including chemists at the village level.

The severity of illness is being assumed from the reporting of treatment seeking behaviour. This could have several explanations: one, since mild symptoms and illnesses could

have been under-reported, their percentage in the entire morbidity cannot be assessed; and two, the possibility of unnecessary and irrational use of medications as part of the medicalisation of health and overdependence on medical practitioners even for illnesses that are self-limiting. At the same time it is clear that there is a large quantum of untreated serious illness that would benefit from rational care at all levels – primary, secondary and tertiary.

While it may not be surprising that UP and MP report high levels of illness rates, the high rate in TN needs some explanation. During Morbidity Round I, approximately 53% reported aches and pains. If seeking treatment is taken to indicate the seriousness of illnesses, then 85% had taken some form of treatment and one-third had taken treatment from the modern private provider, at a cost. Instead of dismissing this category of illnesses as minor, the reason for such high prevalence was investigated. The fact that water in this village was brackish provided a clue as did the fact that this village is situated in an area which has matchmaking and fireworks industry. Therefore water from all the sources in the village was sent to a laboratory in Delhi to estimate its fluoride content. While all the sources had fluoride that of two of the sources was found to be above the acceptable limit. Skeletal fluorosis was a likely explanation for the high prevalence of aches and pains in this village. The high fluoride content of the groundwater could also explain, partly, the high rate of spontaneous abortions and stillbirths in the TN village.

The high levels of morbidity in UP, including the high number of tuberculosis patients was linked to the hazardous occupational nature of the quarrying which forms the major livelihood of the people. This could also explain the high rates of spontaneous abortions in this village.

A similar picture of high morbidity levels were seen for illnesses of long-term duration. If these morbidities are added to the prevalent disability rates in the villages of the six-villages study, the quantum of morbidity is indeed shockingly high.

An analysis of the types of illnesses reported showed that communicable diseases continued to dominate followed by non-communicable ones. But contrary to the current belief that an increase in “lifestyle” diseases (such as diabetes and coronary heart disease) are the reasons for the increase in the prevalence of non-communicable diseases, in these villages, the types of illnesses covered a wide spectrum, including injuries and those needing surgical interventions. Pulmonary tuberculosis continued to be an important morbidity cause in all the villages, particularly in UP and OR.

Where women’s morbidity was concerned, the general survey (all four rounds) in the six-villages study did not elicit much information. However, when a separate survey was conducted for women respondents, a high level of morbidity was reported by them. In contrast, the 60-villages study showed much lower prevalence rates of illnesses reported “on day of survey” and long-term illnesses. This calls for a comment on the validity of data which is linked to the methodology of data collection. The six-villages study was intensive with the first round of morbidity data being collected following three

months of interaction with the people and after their support for the one year study had been obtained. The sample population was all households in the village. The 60-villages study, on the other hand, was carried out as a cross-sectional survey on a sample of households in the village, the survey team interacting with the household members for the first and only time while administering the questionnaire. This is generally the methodology adopted in most surveys. In the six-villages study, it is the sensitisation of people and the rapport built with the survey team, that has led to the reporting of illnesses which otherwise would not get reported. In these villages, the first round of morbidity data was collected after two to three months of interaction during the situation study. Hence the quantum of morbidity being reported during the six-villages study is probably closer to reality. It is in this context of the high quantum of morbidity with its wide spectrum of illnesses that the availability and utilisation of healthcare services need to be seen.

### Inferences from the Study

This study brings in-depth village data on health conditions, determinants and health seeking related perceptions and behaviour from six states with varied experiences of development, with a more generalisable view of two districts per state from five randomly selected villages per district, i.e., 10 villages per state.

The study demonstrates that the conditions in which people grow, live, work and age – the social determinants of health – are mostly responsible for the differences in health status observed in the study population. Access to food, water, sanitation, and working conditions are seen to be critical in determining health status. Socio-economic status – income levels, gender and caste – and social policies deeply affect the possibility of leading a healthy life.

The findings of our study affirms that for the vast majority of people who live in rural India, improvements in health status lies in bringing about fundamental changes in their living conditions. Social policies that are enabling as in the case of TN, specifically those linked to increasing access to food, have had positive impact on the lives of the people, as compared to the other states. The negative outcomes of development projects and decisions linked to corporate needs are a matter of grave concern, so also the state repression of any form of protests.

The inequalities that underlie the conditions of living are systemic, stemming from several factors outside the control of the health system – yet, access to good quality rational health services becomes equally important in preventing illnesses and dealing with ill health once they occur.

It is with this view that, in addition to the population based study, PROH undertook a survey of health service institutions, focusing on the healthcare provision in the public sector from the village level up to the district level. Data collection was conducted at the time when the National Rural Health Mission (NRHM) was well underway in all the states (January 2009 to September 2009), though implementation had proceeded to

variable extents. The policy implications for the development of health services and the recommendations of the group are presented in what follows.

### Policy Recommendations

A universal finding in the study area, including TN, was that at the village level, primary level care was being provided by a network of informal providers (mostly unqualified). Chemists provided a substantial amount of treatment by supplying over the counter dispensation of medicines. "Modern private" medical care was the one most utilised in all the villages with the exception of OR. The public health sector's presence at the village level was through the ANM whose activities were confined to immunisation and taking women for institutional deliveries. Under the NRHM, the PHCs functioned only for immunisation and deliveries. At the secondary and tertiary levels, however, despite erosion, our study reveals a fairly high utilisation of both public outpatient and inpatient services at the secondary and tertiary level care. But this is accompanied by poor patient satisfaction and at a fairly high cost (although lower than private).

The following policy implications and recommendations have emerged from this bottom-up view of the health conditions and services. While identifying the various challenges confronting health policy formulation, the findings have been used to analyse the ongoing official attempt to deal with them through the NRHM. Since several of the NRHM initiatives/components can only produce results in the long term, it was thought prudent to restrict the analysis to the design issues of the NRHM and not its actual outputs, though wherever robust data was available, relevant experience reflected by it has been drawn upon.

### District-Level Planning

(1) The high degree of variability in the health conditions across the states, between the districts within a state, and between villages within the districts and the considerable variation in coverage, availability and quality of health infrastructure, supplies and human resources at these levels, underline the importance of strengthening district-level planning and administration of health services.

Therefore, a decentralised situational analysis and planning for health is essential. The district has already been identified as the unit for planning and implementation by the NRHM, and our findings lead us to reiterate its necessity. The district plans must form the basis for health services development, with the state and national level policies/plans providing the enabling structures and processes to facilitate their formulation and implementation.

Under the NRHM, district planning exercises have been implemented in most states, but the district health action plans show that they have not been as context specific as is needed.

(2) The district-level planning would require building epidemiological capacities at district level linked to the healthcare services. Examining local demographic trends and morbidity patterns and thereby identifying the major determinants

affecting health status in the local population must form the basis of the district plan.

(3) It would have to be part of an integrated plan, since several determinants would be addressed by departments and ministries other than that of health. While the implementation of integrated action would have to be at the local level, coordination between ministries and departments would be required at higher levels to facilitate the task. Inter-sectoral coordination and integrated district planning has been considered desirable for a long time, but implementation has been near impossible. Working out the concrete modalities of how it can be done requires identification of common objectives and indicators against which the different domains plan their tasks.

(4) The focus on the district does not diminish the responsibility of the state or national levels, and in fact, would require that the policy, planning, administrative, supervisory and monitoring systems at all levels are strengthened. It would also require identifying areas where decentralisation could be detrimental and centralised action desirable. For instance, funds would have to be distributed from a central financial allocation to ensure equitable distribution and access. Another instance is in negotiating contracts for recurring supplies such as pharmaceuticals and equipment which would be advantageous for the system if the benefit of scale operates, and therefore the prices must be decided at the highest level possible, while the actual purchase must be as per local need. Thus this balance between centralised enabling actions with flexibility to local context must be carried forward beyond what has been attempted under the NRHM.

### Village-Level Issues

(5) Village and cluster-level variations need to be addressed by the local health service units, whether it is the sub-centres or PHCs and the anganwadis of the Integrated Child Development Services (ICDS).

(6) The spatial and social location of households and individuals within households matters. Health systems are usually designed to cater to the "core". Marginal and segregated households and individuals either have no access to any healthcare or access only to poorer quality healthcare. Local identification and documentation of the marginalised hamlets and/or social groups must form an essential part of the village level records which must be used for ensuring inclusion in service delivery and for supervision and monitoring.

(7) Several of the convergence measures have to be operational at the village level and workers have to be facilitated to coordinate their activities across departments. For instance, the anganwadi worker (AWW) and ASHA for growth monitoring, ANM/multipurpose health worker (MPHW) and water and sanitation, school health, etc.

### Morbidity Pattern and Healthcare Needs

The morbidity pattern, though variable across states, indicates high levels of communicable diseases as well as non-communicable diseases (NCDs). Hospitalisation was found to

be greater for communicable diseases, but NCDs also formed a significant component.

The nature of NCDs covered a wide spectrum among which the conventional ones linked to over-nutrition and sedentary lifestyles such as cardiovascular and diabetes formed only a part of the morbidity profile. Occupational injuries, environmental toxicities and nutritional deficits emerge as major non-communicable problems with local specificities.

This reiterates the need to study and understand disease patterns and causations at the local level (village, district) to plan for an epidemiologically rational primary level health-care for prevention, basic curative services, and rehabilitative or palliative care to be provided as close to homes as possible. These have to be backed by accessible and quality rational services at the secondary and tertiary levels.

### Costs of Care: Public and Private

The findings on cost per hospitalisation episode are unequivocal that a higher utilisation of public services reduces costs. Among the states, where utilisation of the public services is of a higher proportion, the expenditure is lower. Utilisation of public services is high wherever the private sector is poorly developed, as in HP and OR, or where the quality of public services is better and relatively adequate, as in TN. The issue is of the private sector being perceived to provide better quality services but increasing costs. Therefore, strengthening of the public system has to be the mainstay of health services development.

Costs of care within the public services are found to be lower in states where there is greater administrative efficiency and transparency, as in TN. Surprisingly, in HP where the public sector shows high utilisation, the costs of hospitalisation was found to be very high. This needs to be investigated further and appropriate steps need to be taken to reduce costs.

Medicines and diagnostics are the major items of expenditure within healthcare. Transport and loss of wages are other significant costs. Providing free medicines to all users of public services is important to ensure medical access to all.

To minimise the costs to the system of this responsibility, several measures that can be taken are:

- Procurement systems that are transparent and need based must be developed in all the states. The central or state government should generate the rate contract with the producer-supplier and purchase should be based on need. Procurement of generics as a general rule should be enforced wherever possible.
- Rational drug use must be promoted within the systems, with essential drug lists, standard treatment guidelines and generic procurement to facilitate rational prescribing by doctors.
- Over-medicalisation can be further curtailed by decreasing the dependence on specialists and making paramedics, nurses and generalist doctors the mainstay of good quality primary level care.

The working of the Rogi Kalyan Samitis (RKS-patient welfare societies) presents a mixed picture across the states. Their composition and functioning appears to need regular review for

accountability, sustainability and institutional strengthening, since there was no significant evidence in the institutions, of increase in responsiveness to users' needs. In the case of TN, the RKS had truly brought in new life. At least Rs 5 to 6 lakh were being spent each year from the funds collected. There were no user fees levied (as per a TN government order). A wide range of activities were being funded including buying of equipment, buying of drugs and civil works and repairs, maintenance, etc. The medical superintendent of the district hospital at Kancheepuram explained that going to the public works department was a time consuming, costly and bewildering experience. The RKS funds meant that the expenditure and the outcomes were much more in the control of the local doctors.

There appears to be absolutely no rationale any longer for levying user fees. All evidence shows that the untied grants of the NRHM provide enough local level funds for institutional needs. In any case, the user fees only provide a small fraction of the finances required for running the system but go a long way to discourage use of the public services.

The low level of expenditure of these funds and those that lie unspent requires enabling government orders and capacity building of medical officers in purchase and account monitoring with transparency.

### Rationalisation of Service Coverage

The situational analysis of district health services must assess the load of outpatients and inpatients reaching various institutions and seek to understand the reasons why it is low or high. This information should lead to a rational increase in coverage, with well-planned location of new facilities. Similarly, there should be a rationalisation of the human resources and skills required to ensure all services as per need.

Referrals from lower to higher levels are often made even when the required management could have been provided at the lower level. All measures should be taken to minimise this practice, including skill and confidence building of all personnel and referral audits to assess the unnecessary referrals.

Use of local traditional health practitioners and home remedies was not insignificant in all the states. The ayurveda, yoga, naturopathy, unani, siddha and homoeopathy (AYUSH)

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MANAGER

doctors co-located within the PHCs, community health centres (CHCs), and district hospitals (DHS) under the NRHM must be encouraged to practice their own system and should not be required to substitute for allopathic doctors. Local traditional health practitioners and home remedies must also be encouraged for rational use. Documentation and validation of these practices is necessary, and a district resource centre for local health traditions should be set up in each district for these tasks to be followed by promotion of the validated practices. There should also be AYUSH or multi-pathy paramedics who can provide primary level care.

Mobile Medical Units (MMUs) have been used under the NRHM to take the services to underserved areas. The reports on these MMUs are equivocal, some showing increase in access, others finding they are not cost effective or sustainable. Moreover, often they operate without doctors and at times with only ayurvedic practitioners. Adherence to regularity and coverage of interior areas are also well recognised problems that need to be rectified.

### Human Resources

The plurality of health providers presents a challenge for policy, which can be converted into a strength given the diversity of people's needs and the capacities of the providers. The high level of utilisation of informal providers indicates the importance of placing well trained paramedics providing basic curative services at village and cluster level.

The shortage of human resources needs to be analysed for all levels – doctors, specialists, nurses, paramedics, cleaning and other support staff, etc.

Improving conditions of work are essential for attracting and retaining doctors within the public services. Besides strengthening the infrastructure and facilities, rational salary structure at par with other public sector professionals, avenues for career advancement and back-up support by the system in terms of fighting legal cases by patients and their families would help in retaining doctors in the public system.

The personnel must be facilitated to travel for outreach services, supervision, etc. For instance, the ANMs could be given loans for purchase of cycles or motorcycles, and doctors for motorcycles or cars. They should also be given a lump sum for operational costs.

For the difficult-to-reach areas, besides an additional honorarium, there should be local recruitment for training and then local posting of ANMs and other paramedics.

Other than the AWW and ASHA who are locally recruited "community volunteers", various locally recruited paramedics should be trained as per need, for instance in physiotherapy in the areas where injuries are high, laboratory technicians, and home nursing where old age and palliative care requirements are high.

Improving the providers' attitude towards patients and the community is essential if people are to use the public system. While improving conditions of work (that include the providers' incomes as well as facilities for providing services to patients) can help, orientation programmes and mechanisms

for community interaction would be useful in improving attitudes.

### Making Institutions Patient Friendly

Ensuring regular electricity supplies/generator sets in each institution will facilitate service provision and utilisation of public services, including at sub-centres, PHCs and CHCs.

Assured water supply is a necessity to run any health institution and adequate arrangements must be made for this.

Approach roads need to be built in place of the *kachha* (dirt tracks) ones; this could be under the Prime Minister's Gramin Sadak Yojana and Mahatma Gandhi National Rural Employment Guarantee Act. Lack of transport is found to be one of the major barriers in accessing care and therefore needs to be provided for.

One public popular face of the NRHM in TN is the emergency ambulance service – 108. People everywhere appreciated this and talked about it in glowing terms. Some use of local private transport with payment/reimbursement by the institution upon arrival of the patient has worked in TN and other states as well. Various initiatives taken by the different states under NRHM need to be examined to draw lessons for a cost effective system, maybe with multiple options allowed to take care of the variations in distance, availability, costs, etc. Transport for taking the patient back home must be part of the transport mechanisms instituted.

### Public-Private Partnerships

The study shows the extent of commercialisation of health services. While user fees and contracting in or out of services is seen in the public institutions as PPPs, a range of private practitioners constitute the "for profit" services. Given the cost and quality factors, it is evident that strengthening the public services is the only rational longer term sustainable policy approach. All public funds must go towards strengthening of the public services rather than being diverted to the private sector.

There are interstate variations in the growth and distribution of "for profit" private health services. Except for HP and OR where the presence of the private sector is small, all other states have a vibrant private sector.

Private practice in the public sector is rampant in all states except HP. The complex linkages between the public and private and between the formal and informal private sectors need to be understood to inform policy initiatives for regulating the private sector. The regulatory framework has to take into account state specific realities of the structure and dynamics of public and private sectors.

The report of the task force on private sector set up under the NRHM still awaits official adoption or response, but there is an urgent need to adopt an official policy framework for the regulation of and partnership with the for profit private sector.

### Issues of Hunger

The problem of under-nutrition that was found to be much larger in the villages studied than the national data projects among both children and adults of working age groups, needs

urgent attention if health and well-being are to improve in any significant way.

The ICDS, mid-day meal and PDS are essential and need to be strengthened. Besides these food-related programmes, other major expenditures of rural households that are also responsibilities of the state must be provided free so that the expenditure that has shifted from nutrition to these heads becomes available for food, for example, primary education as assured by the right to education, and universal access to healthcare.

Production of local coarse cereals, pulses and oilseeds needs to be promoted and their use encouraged for cost effective food and nutrition security. The PDS could include these for support prices to farmers and making available at subsidised prices to consumers.

Local community level surveillance involving panchayats should be put in place. This must inform district planning and monitoring of food and nutrition-related interventions.

The village health and sanitation committees (VHSCs) should be involved in the process of nutrition surveillance as well as in measures to deal with the malnutrition.

For the 0-3 year old children, there should be convergence between the ICDS workers and the ASHA. The ASHAs should be given incentives to identify malnourished children as part of their assigned tasks.

### Monitoring of Health and Nutrition

As part of the regular (monthly) monitoring of various sector programmes done by the district collector in his/her district, they must examine reports and data on some health and nutrition-related indicators and institute corrective measures rapidly, since these deal directly with survival, health and well-being of the people. Facilitating convergence between departments would also become easier with this information. The indicators used could be:

- Outpatient department (OPD) attendance at health centres and hospitals.
- Caesarean Section (CS) rates at CHCs and DHs – to know the effectiveness of the Janani Suraksha Yojana (JSY) in dealing with complicated cases of delivery. It should increase with JSY, but should not exceed a rational level. While 15% is the expected rate of complicated deliveries, not all need a CS, but among the cases coming to a secondary or tertiary care centre, the rate may be much higher because a greater proportion of patients with complications are likely to come there.
- Maternal death audits by an independent team could be institutionalised, as has been done in several states under the NRHM.
- Referral data would also show up breaks in public sector services and/or practices of doctors.
- Nutritional surveillance would need monitoring on a regular basis so that early signs of distress are picked up and action for relief as well as long-term measures instituted. While the ICDS is ideally placed to provide this data, the discrepancy seen between ICDS growth monitoring rates of malnutrition and the National Family Health Survey (NFHS) data is 1:17.

Therefore, independent monitoring of nutritional status seems necessary, until and unless the ICDS monitoring system is made more effective.

- Diarrhoeal disease incidence, especially in the identified hotspots. The Integrated Disease Surveillance Project (IDSP) data, coming from all levels of healthcare, can be made use of.

### National Surveys

This study clearly shows that there are regional differences in the health outcomes and health seeking behaviour across caste/tribal groups. While the conditions of the SCs/STs in general are poor, these broad categories do not capture the regional specificities. Therefore national data sets like the National Sample Survey Office (NSSO) and NFHS need to go beyond the classification of SCs and STs for a nuanced understanding of the regional/state/district variations in caste dynamics and its impact on health and health seeking behaviour.

Where morbidity data is concerned, quick cross-sectional surveys should be supplemented with in-depth, longitudinal surveys (at least of one year duration) to get a more accurate picture of prevalence, incidence and seasonal variations in illnesses. However, even this may not capture the special problems of women which would need a separate survey with sensitised female investigators. Although we did not attempt it, we recommend that similar surveys to elicit the special problems of males should also be conducted.

### NOTES

- 1 Amarjeet Sinha, Jean Dreze, Anuradha De, Claire Noronha, and Meera Samson.
- 2 The districts were stratified into four quartiles on the basis of a composite ranking constructed from rural female literacy, IMR, safe delivery and immunisation rates. The sample districts were chosen purposively from the second and fourth quartile.
- 3 This is a form of untouchability practised in restaurants and tea shops in Tamil Nadu (mostly rural) whereby tea/coffee or water is served in separate cups (tumblers) to upper castes and lower castes to prevent the upper castes from being polluted.
- 4 According to one account from the OR village, in 1951, with the first census, the STs were marked as Hindus by the census officials although they had said that they were not. This continued till 2001, when there was a discussion and the people refused to say that they were Hindus. The ST people said that their religion was *Prakritik* (nature) but since there was no such column, the census officials got angry and put them down as Hindus (interview 23 November 2007).
- 5 <http://www.hindu.com/thehindu/2001/06/09/stories/0409223v.htm>
- 6 The morbidities in this study are reported ones. Because of ethical reasons, we did not attempt any clinical examinations.

### EPW Index

An author-title index for *EPW* has been prepared for the years from 1968 to 2010. The PDFs of the Index have been uploaded, year-wise, on the *EPW* web site. Visitors can download the Index for all the years from the site. (The Index for a few years is yet to be prepared and will be uploaded when ready.)

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