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Governance of Communicable Disease Control Services

A Case Study and Lessons from India

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Abstract

Das Gupta, Khaleghian, and Sarwal study the impact of governance and administrative factors on communicable disease prevention in the Indian state of Karnataka using survey data from administrators, frontline workers, and elected local representatives. They identify a number of key constraints to the effective management of disease control in India, in misaligned incentives, and the institutional arrangements for service delivery. The authors discuss these under five headings: administrative issues; human resource management; horizontal coordination; decentralization, community involvement,

and public accountability; and implementation of public health laws and regulations. They find that India's public health system is configured to be highly effective at top-down *reactive* work, such as bringing disease outbreaks under control, but not for the more routine collaborations required for *proactive* disease prevention. The authors conclude with policy recommendations that take into account the complexity of India's system of public administration and the need for simple reforms that can be easily implemented.

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When I arrived in Berlin, I heard the words 'sanitary' and 'health' everywhere, but I really did not understand those words. What I eventually came to understand was that these words meant not only the protection of the citizens' health, but also referred to an entire administrative system that was organized to protect the public's health. ... This system operated administratively, through the state, to eliminate threats to life and to improve the nation's welfare.

—Nagayo Sensai, one of the architects of the Japanese public health system, c. 1871[1]

Introduction

Although it is widely accepted that the most effective approaches to improving population health are those that prevent rather than treat disease, the dialogue on public health interventions for developing countries has centered on curative services and personal prophylactic interventions such as immunization—rather than on the much wider range of activities that seek to protect population health by reducing *exposure* to disease. Disease control activities are quite distinct from those involved in personal health services. They include, among others, activities such as checking that irrigation canals are maintained such as to discourage vector breeding; monitoring waste disposal and water systems; ensuring that food supplies are safe; inspecting slaughterhouse hygiene and animal housing; and working with the police and judiciary to enforce public health regulations. These activities frequently fall *outside* the direct responsibility of health authorities themselves: a fact that may explain their relative neglect in the public health literature in recent years. A large number of demographic and historical studies confirm that few countries have been able to achieve substantial or sustained mortality reductions without establishing these services on a strong footing.[2]

Why do these activities matter? There is strong evidence from the history of present-day developed countries, that the development of these services played a key role in bringing about their health transition.[3] An abundance of data shows the synchronicity of public health interventions with improved health outcomes in OECD nations and other countries. Improvements in sanitation were associated with reduced typhoid incidence in 19th Century France (Woods, 2003), and dramatic reductions in malaria were recorded following multipronged efforts to reduce vector breeding and parasite transmission in Southern Europe, Central America and several Asian countries throughout the 20th Century.[4] Johansson and Mosk (1997) point to the impact of public health interventions on adult mortality rates in Japan, arguing that nutritional intake rose very slowly before

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1. Teizo Ogawa and Shizu Sakai (1980) Matsumoto Jun jiden to Nagayo Sensai jiden, Heibonsha, Tokyo, pp.133-4, cited in Ann B. Jannetta 2001.

2. See for example Preston (1976); Preston and van de Walle (1978); Szreter (1999); McGuire (2001); Woods (2003).

3. For examples of this vast literature, see papers in Schofield and others (1991), Szreter (1988, 1999), Johansson and Mosk (1987), McKeown (1976), Preston and Haines (1991), Rosen (1993), and Duffy (1990).

4. See for example the papers in Das Gupta and Khaleghian (forthcoming). In a particularly dramatic illustration, Evans (1987) and Vögele (1998) refer to a cholera epidemic in Hamburg in 1892 that resulted from its neglect of public health measures adopted by neighboring cities to avoid such epidemics.

the 1940s—the same time Japan was experiencing rapid improvements in life expectancy—and that these improvements were instead primarily attributable to the public health measures it employed, including its heavy reliance on enforcement of public health laws and regulations.[5] This may also help explain why life expectancy in Japan and its colonies in Korea and Taiwan was so much higher than in other countries with similar per capita caloric availability in the early 20th Century (Figure 1). Detailed statistical analyses—*e.g.,* on the independent effects of nutrition, public health interventions and income gains on health outcomes—are largely lacking because of methodological and data challenges. Yet it is apparent from events such as the recent SARS epidemic that enormous global costs can ensue from inadequate disease monitoring in one locality, or oversights such as poor plumbing in one apartment block.

In this paper we depart from the tradition of examining disease-specific interventions or packaged programs in isolation. We attempt a broader perspective on the public health *system—i.e.,* the entire network of actors, both within and outside the formal health sector, whose participation is essential to the sustained and effective delivery of public health services—as a whole. We examine the public health system of the Indian state of Karnataka in two ways. In the present paper we concentrate on the system's *administrative framework*, including such issues as vertical and horizontal coordination, human resource issues and community involvement. In a companion paper[6] we examine the system's performance against a list of *core public health functions* such as assessment, policy development and assurance. The former perspective draws on the literature on governance and public administration in developing countries and is summarized in the sections below; the latter draws conceptually on work by the U.S. Institute of Medicine, PAHO and the World Bank[7], and practically on studies carried out in the United States, Latin America and Eastern Europe by PAHO (2002) and the U.S. Centers for Disease Control (2002).

Public health action is a complicated task that draws on a wide range of actors within and outside the health system: hence our interest in its administrative and governance dimensions. To be effective, the system needs a number of administrative elements to function properly. There needs to be effective *vertical and horizontal coordination* among the various actors (including various actors *within* the health agencies themselves) to promote adequate flows of information and support and ensure consistencies in policy and practice across programs, levels and jurisdictions; *intersectoral coordination* between health authorities and other public agencies whose work impinges on health outcomes (*e.g.,* garbage removal, irrigation and drainage); *effective enforcement of public health laws and regulations*, including the regulation of private activities that impinge on health (*e.g.,* food and housing standards, cattle-keeping practices); and *continuous partnership*

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5. See for example Tatara (1991). The application of Japanese public health policies in its colonies of Korea and Taiwan are documented in Barclay (1954), Kim and Yu (2002), Sung and others (2003), and Yu (2003).

6. Das Gupta, Khaleghian and Sarwal (2003).

7. U.S. Institute of Medicine (1987, 2002a, 2002b), PAHO (2002), Claeson, Elmendorf, Miller and Musgrove (2002); Garcia-Abreu and others (2002).

with communities, both to build support for public health measures and to strengthen program implementation and monitoring at the local level.

Equally important are the more routine aspects of public sector activity, such as policymaking processes, recruitment procedures, pay, promotional opportunities and the impact of corruption. Evidence for the impact of these subjects on public health services exists both for immunization (Gauri and Khaleghian 2002) and for disease control programs against onchocerciasis, trypanosomiasis and malaria (McMillan and Meltzer 1996; Garfield 1999). If health workers are poorly motivated because of erratic or insufficient pay, if corruption leads to weak enforcement of public health laws, or if consultative processes fail to take into account the perspective of service delivery agents in setting budgets and designing programs, then disease prevention activities—with their heavy reliance on constant and coordinated action across sectors, agencies and levels of government—can fail to be effective, irrespective of the extent to which their technical aspects are highly developed. Hence our interest in governance-related issues in the present paper.

The context for our investigation is the South Indian state of Karnataka. Karnataka is recognized as being one of India's better administered and more reform-minded states. The state has a population of 53 million, a literacy rate of 67 percent and an infant mortality rate of 57 per 1,000 live births.[8] But like India as a whole, its performance on public health measures remains relatively poor. Figure 2 shows that key public health outcomes indices in many other low-income countries are very substantially better than those of India.[9] It also shows that India's health spending—whether measured as a total or in terms of the government's share—is not especially low in comparison with these countries.

India also has access to other important resources. It has a considerable degree of administrative capacity within government, as evidenced by its records of success in increasing agricultural production, reducing fertility and preventing famines (Sen 1990). The reach of its government extends to the furthest peripheries, as evidenced by its ability to effectively collect revenues, conduct elections, carry out censuses and collect statistical data continuously in a vast and far-flung population of nearly a billion people. Its human resources are extensive—including in fields such as pharmaceuticals, statistics and information technology which have special relevance to public health—as evidenced by the large number of India-trained professionals absorbed by health agencies and research institutes around the world. Its basic public health infrastructure (*e.g.*, laboratories and training facilities) is in reasonable shape, as attested by respondents in the present study. And it has been successful at carrying out complicated development programs requiring a high level of coordination and outreach—such as increasing agricultural production and reducing fertility—to a vast population over much of its history.

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8. Census of India, 2001 and SRS Bulletin, April, 2002.

9. See Halstead, Walsh and Warren (1985) for an early discussion of these issues.

These resources have also been used to good effect in certain aspects of its health system. Primary health centers exist throughout the country and provide basic curative services in a reasonably equitable fashion; vertical health programs have been carried out effectively, particularly those for family planning and polio; and outbreak responses are typically carried out with relative promptness and efficiency, e.g., for cholera and plague.[10] These services have been run with considerable success under difficult circumstances, and their strengths and weaknesses have been extensively analyzed elsewhere.[11]

In the present study, we concentrate on an area of relative weakness in India's health system: namely, its ability to effectively *prevent*, rather than to treat or control outbreaks of, communicable disease. We discuss how the system is organized and managed, summarizing our findings under five headings: administrative issues; human resource management and personnel issues; horizontal collaboration; community involvement; and enforcement of public health laws and regulations. A more general discussion concludes, including policy recommendations for improving the system's effectiveness.

We find that Karnataka's disease control system has good ingredients in terms of personnel and resources, and that the system could improve its performance substantially with modest organizational changes. Key changes include a careful expansion of managerial autonomy, nonmonetary incentives to promote worker motivation, involvement of local elected bodies in program implementation, and enforcement of public health regulations. While many of these issues are applicable also for other forms of public service delivery such as education or water supply, disease control services encompass a far wider range of activities than most other public services. As described above, disease control requires an intricate web of continuous coordination between planners, technical experts, and those with local information and implementing capacity, as well as with several other public agencies. This makes it an especially complex task to ensure that the appropriate institutional and incentive mechanisms are in place for effective disease control.

Data and Methods

Three sets of questionnaires were administered. One sought to assess the governance and administrative factors underlying service delivery and was adapted from governance toolkits developed by the Poverty Reduction and Economic Management unit of the World Bank, with some additional questions developed by the US Centers for Disease Control. A second set of questionnaires was based on the questionnaires developed by the US Centers for Disease Control for evaluating the assessment, policy development and assurance in public health, i.e.,, on the 10 "Essential Public Health Services" (IOM 1988, 2002a) and subsequently used by PAHO in their studies of public health systems in Latin American countries (PAHO 2002). A third set assessed intersectoral collaboration and community involvement in environmental sanitation functions. Each set of questionnaires

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10. See for example Bonu and Rani (2003), and Arnold (1989).

11. See for example Peters and others (2002); and Mahal and others (2002).

was developed for three types of respondents: those working at the level of the state, of the district, and the frontlines. Thus a total of nine questionnaires were administered.

Two districts were chosen for canvassing the district-level questionnaires: Mysore, with health and development indicators above the state average; and Gulbarga, with indicators below the state average. Within each district, questionnaires were administered to a predetermined mix of respondents from different departments at the district and field levels. Actual interviewees were selected at random from among all the same category of respondent in the district — except for senior officials such as the District Health Officer and District Commissioner, who were purposively interviewed because they hold unique positions.

We administered questionnaires to 131 respondents at state, district and field levels in the Indian state of Karnataka. Staff were chosen from all government departments involved in public health activities, including not only the health department itself but also the departments of rural and urban development and public health engineering. Questionnaires were also administered to local elected representatives and members of the *panchayati raj* system, including village-level representatives. End-users will be surveyed in a second phase of the study. The variety of respondents helps guard against the fact that responses are often conditioned by the circumstances and working experience of a particular category of official, and may not provide a complete picture of the functioning of any particular activity. As we show here, differences in perceptions between different categories of officials were extremely revealing.

A smaller sample of interviewees at the state and district levels were also visited for in-depth qualitative interviews. Groups of field staff were also interviewed separately, using focus groups. Data from the questionnaires were entered into a spreadsheet and prepared for analysis.[12] Data from the qualitative interviews were entered alongside the relevant sections of each questionnaire and were used to help interpret the former.

The present paper concentrates on results from the governance and administrative issues questionnaires. Salient points from the other two questionnaires and from the qualitative research are included where relevant. A separate paper describes results from the questionnaire on public health functions.

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12. For the governance questions, the collective response to a question was taken as positive if at least 60% of the respondents replied in favor of 'yes' to the question; for the questions with responses on a graded scale, the weighted mean response was calculated by weighing the 'no' responses as 0, and the responses with absolute agreement with the question as 4, and other responses in between. Then, the proportion of this weighted mean to the highest possible agreement was calculated. The collective response to a question is taken as positive if this figure is at least 0.6. For the environmental sanitation questions, respondents were asked to give their views, on a weighted ordinal scale from either 0 or 1 to 5. For each of the questions, the weighted mean of the group response for each question was obtained; then, the overall mean of means for each of the subjects of interest—e.g. intersectoral collaboration or PRI participation—was calculated. This figure was converted to a proportion by comparing it to the maximum possible score. For purposes of calculation, it was assumed that the ordinal variables are distributed continuously.

Findings

1. *Administrative issues*

India's health system has an impressive record of organizing campaigns and managing crises and a strong record of sustained action in highly focused areas such as family planning. That the Indian administrative system can deliver outcomes quite efficiently is borne out by its successful conduct of two massive operations carried out periodically throughout the country: its census, carried out every ten years since 1872, and its regular elections. Both activities involve a clear delineation of tasks and of the standards of efficiency expected, and in both cases the responsible persons and agencies are provided with the resources, authority and flexibility required to accomplish them in the most effective way.

The organizational structure and culture of the system are well suited to such activities. Centralization is the rule, and a strong command-and-control culture prevails in which authority differentials between levels—center to state, state to district, district to frontline staff, supervisors to workers, and *everyone* to communities and end-users—are profound. The strictness of these hierarchies is appropriate when the goal is to respond quickly to a crisis or to carry out a technically intensive activity in a highly focused way.[13] But the way the system operates is less appropriate for the more collaborative, consultative and integrated range of activities required to *prevent*, rather than respond to, outbreaks and emergencies. To examine the extent of this imbalance, we asked a range of questions on administrative issues affecting the health department's performance. These revealed highly centralized policy making processes involving little consultation with implementing staff or end-users; substantial restrictions on the fiscal flexibility of states and districts; erratic budgetary allocations and transfers; little managerial autonomy for district managers; and disincentives for innovation.

Centralized policymaking

The Indian constitution divides responsibility for government functions into three categories based on whether they are the exclusive province of central (union) or state governments separately, or are shared between the two (Gupta, 2003). According to the constitution, public health and sanitation services are the exclusive responsibility of state governments. The concurrent list—of matters on which both the state and central governments can legislate, and for which they share responsibility—includes 'prevention of the extension from one State to another of infectious or contagious diseases or pests'.[14] The health-related provisions in the union list relate to port quarantine, research, and

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13. See for example Liese and others (1992); Cairncross and others (1997); and Oliveira-Cruz and others (2002).

14. The text of the concurrent list relating to health services is: 'Prevention of the extension from one State to another of infectious or contagious diseases or pests affecting men, animals or plants, adulteration of foodstuffs and other goods, population control and family planning, medical education and universities and vital statistics.'

scientific and technical education.[15] Union laws override those made by the states for items in the concurrent list. While nationally-sponsored programs do exist, *e.g.,* for TB control, the constitutional mandate of these programs derives from their place on the concurrent list, not the union one; and decisions on these programs are supposed—in theory at least—to be taken by state and central governments together.

All other public health and environmental sanitation services are supposed to be the exclusive responsibility of states. However, as further discussed below, the center exercises a great deal of power through fiscal control. Post independence India has had a tradition of centralized planning and policy making and decentralized implementation, and the relative financial strength of the central government—rooted in constitutional fiscal provisions—has given it significant leverage to determine the end use of its devolved funds to the states. For states with a strong commitment to development, this can constrain creative approaches to service delivery—though of course in other states it ensures some minimal attention to investing in the social infrastructure.

Given this, it was not surprising to find that the majority (86 percent) of state-level respondents considered the primary locus of decisionmaking for health policy to be the *central* government rather than the state government. According to all but one of the state-level respondents, policy development and program design are carried out centrally (*e.g.,* setting systemwide goals, content standards, performance standards and targets, deciding the types of goods and services to be provided and determining the role of the private sector), are largely carried out by the central government rather than at the state or district level. State government officers participate in the deliberations that lead to policy changes, and have little disagreement with the policy changes.

District and field staff are neither involved nor consulted in policy formulation, and this was reflected in their responses. Their role is to implement orders from above, with the help of technical and administrative briefings. Both groups said they have few opportunities to point out any flaws and weaknesses in the orders they receive.[16] Such observations are rarely communicated to their seniors, and staff have little option but to set about implementing the programs irrespective of their flaws. District respondents were moderately positive about the credibility of policy directives from above (on average rating it 2.9 out of a possible 4); but field staff, perhaps because of their closer contact with ground realities, were somewhat less so.

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15. The text of the union list relating to health services is: 'Port quarantine, including hospitals connected therewith; seamen's and marine hospitals, participation in international conferences, associations and other bodies and implementing of decisions made thereat, Institutions for scientific or technical education financed by the Government of India wholly or in part and declared by Parliament by law to be institutions of national importance, co-ordination and determination of standards in institutions for higher education or research and scientific and technical institutions.'

16. This is not uniform across states. In Maharashtra, for example, it is reported that district officials can and do convey to their superiors if a directive is unsustainable, and that efforts are made to correct it (Maitreyi Das, personal communication).

Lack of flexibility in spending

State-level respondents also commented on the lack of flexibility and autonomy in allocating spending on health programs. All state-level respondents and 77 percent of district-level respondents felt that districts do not have sufficient autonomy in allocating resources: *e.g.,* they do not have the flexibility to move money between line items even within the overall budgetary constraint (an authority enjoyed by the heads of line departments in most states), nor are they allowed to raise their own revenues. Government expenditures in India are divided into two categories: Plan and non-Plan. Plan funds go to finance creation of new infrastructure and launching new schemes, while non-plan funds support the recurring costs of the salaries, supplies etc. required for the operation and maintenance of assets or services put in place during earlier five-year plan periods.[17] Projects financed from Plan budgets typically revert to nonplan status after five years. As a result, 80 percent of total government health spending (excluding the family planning program) consists of precommitted expenditures to meet the costs of programs initiated in *previous* plans. This leaves states with little flexibility in budgetary allocations on top of the absolute resource limitations they sometimes face (Gupta 2003).

On the question of budgetary flexibility, responses from the district were similar to those obtained at the state level: namely, that the majority of funds are preallocated to specific programs, that budgets are prepared at higher levels with very little consultation at the district level or below, and that movement of funds between line items is tightly controlled. When budgetary cuts are to be made, district administrators have little flexibility to decide which expenditures should be cut, or to seek to raise additional resources themselves. District staff were also concerned about uncertainties in the amount and timing of allocations and transfers from the state, and remarked on the consequent difficulties in paying staff and purchasing supplies reliably. When budgetary cuts are to be made, district administrators have little flexibility to decide which expenditures should be cut, or to seek to raise additional resources themselves. District staff were also concerned about uncertainties in the amount and timing of allocations and transfers from the state, and remarked on the consequent difficulties in paying staff and purchasing supplies reliably. State officials admitted to the centralized nature of budgeting processes and to problems in the timely disbursement of funds. They were also aware of the consequences of these problems and felt that improving them—e.g., by giving districts a more accurate indication of the level of funding in their budgets and ensuring that transfers occur without delay—would have a salutary effect on the performance of district health services, including the adoption of new services. 71 percent of state-level respondents thought that if districts were more certain about the levels of funding in their budget, they would have allocated expenditure differently, and would have given higher allocations for wages and new services

Reassuringly, however, the majority of state and district-level respondents did not perceive external political pressure to have significantly shaped policy priorities. 86 percent of state-level respondents thought it 'atypical' for external political pressure to

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17. For further details, see http://planningcommission.nic.in/plans/planrel/plansf.htm

change district-level priorities, while among district respondents 71 percent thought it to be 'a little atypical' and the rest though it to be 'atypical'. However, both groups mentioned feeling pressured to misuse public funds, as reported later.

Lack of autonomy and innovation at the district level

District staff felt that if they had more managerial autonomy, it would help improve organizational performance: indeed around 80 percent of those interviewed ranked this as one of their top three means for improving performance. Field staff agreed: their assessment of their immediate leadership was that they were good at carrying out the duties allocated to them—such as managing staff work schedules to meet organizational objectives such as targets—but that they were less effective at allocating resources to accomplish these work plans, anticipating problems and responding to public concerns.

Specifically, district officials felt that they lacked adequate flexibility to innovate in delivering programs, managing budgets and allocating resources, and they felt that experimentation—*e.g.,* with new approaches to budget preparation, financial management and personnel management to improve performance—would invite disapproval from peers and colleagues, poor evaluations and even disciplinary action from above. Similar sentiments were expressed by state-level officials with respect to disapproval from peers and colleagues, though they saw little risk of poor evaluation or formal disciplinary action. Both groups highlighted the fact that so called autonomous agencies—parastatal bodies that operate outside the formal public sector and are given responsibility for isolated health programs such as blindness control or TB prevention—have more flexibility in staff recruitment, salary setting and budgetary matters than public sector agencies; and both groups perceived this to have salutary impacts on the functioning of these agencies, particularly *vis-à-vis* the speed of decision making, the flexibility of resource allocation and the ability to release funds quickly.

District staff also pointed to the lack of any coherent program for routine review of programs and evaluation of service delivery mechanisms. They felt that assessments of whether they were achieving organizational goals was limited largely to reviewing their performance against service targets allocated by their superiors, such as the number of immunizations given or contraceptives distributed. On the infrequent occasions that such broader evaluations *had* occurred, their results had not been used to identify gaps in service provision or to refine strategies and operational plans.

State officials did not share the views of district staff on the importance of managerial autonomy and the need for greater flexibility at the district level: though they clearly felt it was important for themselves, as reported above. They believed that district health authorities currently have adequate flexibility to deliver programs and manage human resources. They also felt that coherent mechanisms for monitoring and evaluation *are* in place, and that district officials use these mechanisms to review service delivery approaches and evaluate and redesign programs for effectiveness. These views are clearly at odds with those of district officials (Table 1).

2.   *Human resource management*

Much has been written on India's strengths and weaknesses in public sector human resource management, especially on issues relating to recruitment and promotion procedures, pay scales, working conditions, disciplinary procedures, styles of management and leadership and the impact of corruption.[18] We examined a number of these issues among frontline staff as well as officials at the district and state levels. The distinctions between staff at different levels of the hierarchy were sharp, especially between officers recruited by the national or state administrative services on the one hand, and locally recruited field staff (such as auxiliary nurse-midwives and multipurpose workers) on the other. The former have permanent positions with the possibility of several promotions over the course of their careers; the latter have few if any possibilities for promotion, though their tenure is secure. Since field staff have virtually no possibility of upward mobility to state cadres, working relationships are extremely hierarchical, with little exchange of ideas between members of the same team and little incentive to treat the ideas of their junior colleagues with respect.

At the lowest level of the pyramid are *anganwadi* workers, community 'volunteers' who receive a small stipend from the Integrated Child Development Services program and are assigned a wide range of delegated tasks from the health department to be carried out at the village level. *Anganwadi* workers are very poorly paid and have none of the benefits of government employees, such as job security or pensions, despite the fact that many public health programs depend critically on their presence in the community and their close interactions with end-users. They are treated as being of very low status by everyone, including field staff.

Not surprisingly, the perceptions of staff at different levels differ sharply with regard to their service conditions. These differences are summarized below.

Recruitment, promotion and transfers

Personnel recruited through the national and state administrative services generally felt that recruitment, promotion and disciplinary procedures were carried out in a fair, transparent and objective way, with political and social connections having little influence.[19] Recruitment processes were seen to be competitive and objective, all posts being advertised publicly along with job descriptions specifying the qualifications required. Since promotions are given largely on the basis of seniority, most staff viewed them as being reasonably fair, even though they are relatively little affected by performance or merit.

By contrast, field staff reported that recruitment, promotion and transfers are only sometimes transparent and based on merit, and that political and social connections play

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18. See for example Wade (1997).

19. Another interpretation could be that the state and district level officers have a higher perception of the fairness of the transfer, recruitment and promotion decisions concerning staff in their department as they are themselves involved in these decisions.

an important role throughout. They were especially negative on the question of promotions, pointing out that promotional opportunities for field staff—especially those at the lowest levels—are either very limited or absent altogether. They have very limited opportunities for promotion irrespective of seniority: most of them expected no promotions ever, and only a few said that they hoped for a promotion sometime during their career. These findings are similar to those of Wade (1997) in his study of irrigation workers in Andhra Pradesh and of Peters, Yazbeck and others (2002) in their study of health workers in Andhra Pradesh and Uttar Pradesh.

There is therefore little incentive for good performance among workers in either category. Administrative service staff are promoted irrespective of their performance, while field staff are seldom promoted at all. This renders moot the value of evaluation procedures, even though respondents at all levels considered them to be carried out fairly. It similarly impacts on the value of training activities, which most respondents felt were available to them but which they reported to have little if any impact on job placements or promotional opportunities.

Neither do other ways of rewarding good performance exist. Districts have little autonomy in pay and personnel management or matters of placement, and there is little scope for rewarding staff in cash or in kind (Table1). Particularly for field workers, there are limited opportunities for individual or group recognition beyond an occasional word of praise. The key reward available to staff is where they are posted: because of the wide variation in living conditions and amenities, administrative staff prefer the more developed districts, and field staff prefer to be posted around the district headquarters. However, when it came to postings and transfers, respondents at all levels felt that procedures were *not* fair and transparent, and that political and social connections *do* play an important role. Efforts have been initiated recently to make these processes more open and transparent.

Disciplinary procedures, grievance resolution and corruption

In contrast to the near-total absence of positive incentives, there are several *negative* incentives to help ensure attention to prescribed tasks—*e.g.,* threats of disciplinary action such as punitive transfers or withholding of pay—for staff at all levels. All categories of respondents pointed to the importance of meeting service targets to avoid being disciplined. But they also felt that disciplinary procedures were well-defined and implemented fairly, insofar as those disciplined are generally believed to have performed poorly in some way or other. All categories of staff also reported that there is little effective recourse for grievances against disciplinary decisions, postings and transfers.

State and district staff generally believed that civil servants usually follow regulations and codes of conduct. Paradoxically, however, corruption is perceived to be common, and many district-level respondents reported that they sometimes face pressure to misuse public funds. Depending on the district, officials believed that between a tenth and a third of their organizational budget was diverted irregularly in the last two years, taking a toll

on the effective functioning of the health department. State officials were more circumspect in their responses on the matter.

Although corruption is perceived to be fairly common, most disciplinary action is related to indiscipline or poor work performance, such as poor records management or failure to meet performance targets on the part of field staff. Very few staff are disciplined for embezzlement or accepting bribes. The process of taking action on corruption cases is viewed as complex and slow, and subject to political influence in its actual enforcement; and it is not believed to protect the reporter from reprisals. For these reasons, as well as the difficulties of proving such cases, a majority (70 percent) of the respondents stated that they would not report corruption if they came across it. Nor is there significant peer pressure to resign if suspected of corrupt practices.

Pay and working conditions

Administrative service staff felt that pay scales in the public sector are significantly better than those for similarly qualified staff in the private sector. They perceived the vertical compression ratio—the ratio of salaries at the top vs. the bottom of the pay scale—to be fairly equitable, and they commented favorably on the existence of written job standards for all public health positions along with codes of conduct and performance goals for each grade of staff.

By contrast, field staff confirmed what many other studies have also found: namely, that they have poor working conditions, poor personal security when making field visits, and very poor staff quarters. They are often left to pay for paper, registers and other required job-related supplies out of their own pockets (subject to possible—though not certain—reimbursement at a later time), since any failure to maintain the registers is promptly punished. Staff in the less well-endowed district further reported that it was common for them to receive their salaries in arrears. While these perceptions were expressed most strongly by village-level field workers, they were broadly shared even by medical officers and staff at the PHC and *taluk* levels. Workers at the very furthest of front lines were even more critical of their working conditions, pointing to low levels and unreliable distribution of their pay.

Leadership, management, supervision and esprit de corps

Little action is taken to develop management or leadership capacity among health department staff. Since most positions are filled on the basis of seniority, the quality of management and leadership in the public health system is highly variable. The lack of managerial autonomy also has an impact on worker-manager relations, with 88 percent of field staff pointing out for example that their managers do not seem to even have the power to fill vacancies to meet manpower needs.

These leadership weaknesses are not lost on field staff, most of whom describe their relationship with supervisors as being based almost exclusively on service targets and their achievement. Monthly meetings are held at district headquarters at which field

workers come together and have a limited opportunity to interact and share experiences, but the meetings are principally carried out to permit supervisors to inspect workers' registers and to check if their targets are being met. Substantive dialogue on other points seldom occurs.

All field staff interviewed in the study mentioned that they are never asked for their opinion on how program implementation could be improved. In one of their group meetings, all staff—regardless of whether their main duties lay in reproductive health, malaria control or elsewhere—were vociferous in expressing their common perceptions of flaws in program design, such as not coordinating the health department's antimalaria spraying with the irrigation and drainage activities carried out by other departments. They also felt that their supervisors are often completely out of touch with ground realities. They illustrated this by citing the TB control program's choice of auxiliary nurse midwives as primary field workers for its DOTS strategy, even though these workers visit the same village only once or twice a month and are therefore unable to provide the regular patient monitoring the DOTS approach requires. Village-based *anganwadi* workers, who make rounds of the village every day, were overlooked for this purpose, at least initially. In meetings held for the present study, field-workers commented that this was the first time anyone had asked their opinions.

Surprisingly, however, focus group interviews indicated a reasonably strong sense of mission and *esprit de corps* among field staff. Low motivation was generally a result of the practical factors outlined above. But staff remained genuinely interested in their work and concerned about improving performance: a fact that augurs well for the system as a whole, provided some of the more systemic constraints are addressed. These findings are broadly in keeping with Herzberg's (1967) theory and findings from other studies of India's health sector (Peters and others 2002).[20]

A separate cadre of public health staff?

It has been suggested that creating a separate cadre of staff trained in public health—as distinct from the medically trained staff who currently occupy the more senior positions—could revitalize public health services and improve health outcomes (Government of Karnataka, 2000). Experiences from other states such as Tamil Nadu and Maharashtra suggest that having such cadres helps improve the efficiency of public health programs.[21]

A strong argument to have a separate cadre of public health staff is provided by the circumstances in which administrative service personnel are required to function. They

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20. Herzberg's (1968) theory describes worker motivation as a function of two complementary but distinct dimensions: 'hygiene' factors such as physical surroundings, wages and supervisory relationships, and 'motivation' factors such as recognition, achievement, responsibility and the opportunity to take on challenging work. Herzberg's theory predicts that hygiene factors are a necessary but not sufficient condition for improving worker motivation, and that a focus on motivation factors is equally necessary for workers' motivation—and hence their performance—to improve.

21. G.N.V. Ramana, personal communication.

are shifted from one department to another, and therefore have little opportunity to build the skills and institutional memory necessary for effective public health administration. Frequent transfers between departments also reduces the opportunity for them to build a stake in the outcomes on the ground.

Despite the many obstacles they face in effective functioning, the administrative service officials are the decisionmakers. There are many well-qualified technical staff on the rolls of the health department, with a range of key public health skills. These staff are also invaluable holders of institutional memory, since they serve in the health department throughout their careers. However, technical staff interviewed for the present study pointed to their subservience and low status relative to administrative service staff, the poor condition of their office buildings, and their lack of autonomy to practice their public health knowledge and skills.[22]

Our study suggests that creating a separate cadre of public health staff alone, without addressing the systemic issues that impede staff functioning, may not improve the health department's performance significantly. Although public sector employment is secure and well-paid, there are serious obstacles to public health service delivery such as worker-supervisor relations, managerial autonomy and staff incentives, including opportunities for promotion or recognition for good performance.

3. *Horizontal coordination*

Horizontal coordination—between programs, sectors and jurisdictions and with the private sector—is an essential part of effective disease control efforts. The reason lies in the complex nature of public health action. To be effective, public health services must draw on the resources of a wide range of actors, both within and outside the health system. Surveillance, for example, cannot be carried out by one agency in isolation: to be effective, it needs collaboration between administrators, government health workers, private providers, community leaders, school teachers and anyone else who might detect the subtle changes in disease incidence that surveillance systems are designed to monitor. Vector control is another example. The process of locating stagnant water and spraying or draining away calls for collaboration between health staff, community members and drainage officials, and are seldom effectively carried out by one group alone. Finally, and perhaps most dramatically, collaboration is an essential component of outbreak response efforts. Police officials, local governments, traditional leaders and healers, school teachers, community members: all these groups have a part to play, and it is frequently the job of public health officials to make sure they play it an effective, coordinated and timely way. In all these cases, while primary stewardship remains with the government, effective action is only possible if the primary agency—*e.g.,* the health department—is able to effectively collaborate with other actors in the process. In the words of the IOM committee (2002b), "[an] effective public health system that can assure the nation's health requires the collaborative efforts of the complex network of people and

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22. In Maharashtra, Medical Officers and DOs have strong lobby power, both for their own conditions of service and to ensure that they have an input into health-related directives (Maitreyi Das, personal communication).

organizations in the public and private sectors." Particularly in developing countries, where some of the most virulent of infectious diseases remain prevalent, the failure of such collaboration can lead to catastrophic consequences.

Which organizational arrangements can ensure the level of collaboration necessary for effective public health action? A wide range of policy choices are available for this purpose. Some countries have tried to promote collaboration by integrating public health functions in unitary 'super agencies' or creating integrated service delivery units, while others have separate service agencies with mechanisms for mutual coordination towards systemic goals.

However, the experience of some developing countries including India is characterized by short-term measures designed to solve immediate problems rather than to institutionalize collaboration in a more sustainable way. The continued reliance on vertical programs is one example, since these programs provide few incentives for collaborative work across sectors and programs (*e.g.,* between health departments and agencies concerned with water and sanitation) except in campaign-like activities; another is the paucity of direct efforts to promote collaboration across sectors or between public and private agencies in the pursuit of public health goals.

These deficiencies have been highlighted in a number of industrialized countries as well. In Europe, for example, the issue was highlighted in a recent article in *Science* (MacLehose and others 2002), which discussed the limitations of recent efforts to create a pan-European network of collaborating surveillance agencies and outlined the consequences of the current situation for public health and disease prevention in Europe. The U.S. public health system has also sought to highlight and remedy its own weaknesses in this regard. Coordination failures occupy a large share of the IOM report on *The Future of Public Health* (1998) and its two successor publications (IOM 2002a, b).

In India, as in many developing countries, public health functions are divided between several government agencies: health, rural development and public health engineering are just a few examples. Within the health department, many of these functions are further compartmentalized into distinct vertical programs. The importance of collaboration between these agencies and programs is given prominence in various charter documents and declarations in India (*e.g.,* Lok Sabha 1995, pp.1-3), much as it was in the original declaration of primary health care at Alma Ata in 1978. The potential for coordination is also enhanced by the fact that the administrative service staff have strong cadre-based networks, whereby they have close ties to their colleagues in other agencies.

But does collaboration actually happen in practice? To examine this question, we posed a range of direct and indirect questions concerned with three broad areas: first, the ability of staff to identify which agency is primarily responsible for a given public health or environmental sanitation service; second, their ability to identify the agency with residual responsibility for each task, and how this responsibility is exercised when service delivery by the primary agency fails; and third, their comments on potential modes for

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collaboration between these agencies and—most importantly—on how well collaboration and coordination actually occur in practice.

Who is primarily responsible for a specific service?

Respondents were asked to indicate which agency is primarily responsible for a range of public health and environmental sanitation services. There was a lack of overlap between the perceptions of staff from different departments. In one district, the District Medical Officer considered PRIs to be the principal agency for vector control and sewage in rural areas, but the PRI members themselves felt that vector control was the responsibility of the health department, and that there were no sewage services in rural areas. Similarly, in another district, the District Medical Officer felt that the village PRIs were principally responsible for assuring hygienic cattle-keeping practices, but the village PRIs were unaware of this. This District Medical Officer also felt that PRIs were responsible for oversight of food processing, a responsibility that is formally allocated to his own department.

Respondents were then asked to identify the agency with residual responsibility for these services, *i.e.,,* the agency responsible to monitor service delivery and to step in and take corrective action if the primary agency fails to do its job. The task of coordination was considered by almost all respondents to reside in a single office: that of the Deputy Commissioner, known elsewhere in India as the District Collector, who is responsible for overseeing all government services and services and coordinating with the police to maintain law and order in the district. Very few respondents felt that the health department had a stewardship role in overseeing the health-related activities of other departments and assuming residual responsibility when these break down. There was also considerable uncertainty as to what influence the health department can exert over other agencies' work—its ability to take corrective action in response to poor hygiene in government schools, for example—even when a clear threat to public health arises as a result. The only exception—repeatedly stated by respondents at all levels of the service hierarchy—was during emergencies or crisis conditions; yet even here, principal responsibility was considered to rest with the Deputy Commissioner.

Collaboration: why, how and with whom?

There was widespread recognition of the importance of horizontal collaboration by both field and senior staff (Table 2). They identified a wide range of possible modes for such collaboration, from coordinating committees to periodic interdepartmental meetings; and they pointed out that focal points for collaboration include administrative and political offices, autonomous societies (*e.g.,* district TB or blindness prevention societies) and local governments. These channels are activated and used to striking effect during emergencies or special campaigns, often in conjunction with the private sector and NGOs. However, staff acknowledged that under normal conditions, collaboration does not occur on a routine basis: as would be required to *prevent* an emergency or crisis from occurring in the first place. Respondents at all levels said that departments dealing with

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public health issues do not come together to coordinate or even discuss their plans and budgets to make sure their health-related efforts are complementary.

Even more strikingly, most staff had difficulty in identifying whom they might collaborate with. District officials considered few outside their own agency as potential collaborators. When questioned, they mentioned only those who have been designated to help the health department run vertical programs, such as *anganwadi* workers, *gram sewaks* (village level worker of the panchayat), women's groups and community leaders (who take part in national immunization days and other periodic campaigns). They did not mention other key community resources such as schoolteachers, keepers of village land records and nonallopathic medical practitioners. Collaboration with these people would be especially important for effective disease surveillance as well as for building constituencies for public health

Perhaps most startling was that health department staff consistently failed to mention decentralized local authorities—*i.e.,* village or district-level *panchayats*—as potential collaborators. This is notwithstanding the fact that they overwhelmingly recognized the potential importance of such community engagement for program success, and the fact that PRIs are responsible for a variety of public health and environmental sanitation tasks such as chlorination of village water supplies, rural housing, health and sanitation. Nor did they mention the public health engineering and rural development departments, even though a wide range of health and sanitation functions—from providing drinking water, sewerage and drainage services to solid waste collection and disposal—is in their hands. This was true of respondents at all levels, from the front lines to the state.

Surprisingly, state-level officials believed that coordination was effectively carried out in spite of the above deficiencies. But field workers—with their grassroots perspective—felt that senior leaders did not form fruitful relationships with communities or other government departments, except under crisis conditions; and they reported that although supervisors discuss coordination issues with field staff, they do not routinely meet with field staff of other departments (nor with community groups or *panchayat* representatives) to discuss these issues directly with them as well.

These findings suggest two things: that key district officials and PRI representatives are not clear as to the roles of the various interdepartmental forums and agencies in coordinating public health service delivery; and that there is no agreement among key officials, nor between them and PRI representatives, on the precise role and authority of the health department to coordinate with other departments on public health issues or to monitor the health impact of other agencies' functioning.

4. *Decentralization, community involvement and social accountability*

Disease control activities present a wide range of opportunities for community participation in development. Local communities are far better placed than higher levels to have the specific local knowledge essential for effective public health action. Much of this work requires constant access to highly specific local information, especially for vector control and sanitation but also for coordinating and monitoring service delivery

and promoting behavior change. For example: Where is the stagnant water? Who is disposing of garbage in an unsanitary way? When is work done on drains, and how can this be coordinated with water management, waste management and vector control efforts? Where can people soak their buffaloes or wash their clothes without contaminating drinking water sources? Who fell ill last night, and was it reported to disease surveillance authorities? Local communities are in the best position to answer these questions, but they are seldom asked for their input and are usually out of the loop altogether. This not only leads to missed opportunities in terms of information: it also deprives the health system of the less tangible benefits typically referred to as ownership, itself a powerful aid to health planners seeking to maximize the effectiveness of service provision at the grassroots level (Hurley and others1995).

India's system of decentralized local governance—in which a wide range of government functions is devolved to elected bodies known as *panchayati raj* institutions or PRIs—provides considerable potential for this kind of community involvement. The *panchayat* system consists of three tiers of elected bodies, the lowest of which reaches the level of rural villages and urban municipal bodies. Originally conceived in the 1950s and given a constitutional mandate in 1992, the system was designed to promote local participation in the development, planning and implementation of government programs. Members are elected every five years, and reservations exist for women and members of disadvantaged groups.

The system offers considerable potential for state-community interactions and community participation at each of its levels. However, little of this potential is currently being realized in practice. At present, the public health-related activity of most village-level PRIs in Karnataka is largely limited to chlorination of village water supplies and participation in periodic activities such as national immunization days, although they are supposed to be constitutionally responsible for health and sanitation in their areas. Given the little effort made to provide them with the necessary technical and other information, PRIs and their members currently lack the technical knowledge and broad perspective necessary to make resource allocation decisions.

With their unique position as formally constituted elected local bodies with a high degree of access to local information and public accountability, PRIs are well-placed to implement a wide range of public health activities on the ground—*given* concomitant outside efforts to provide technical support as well stoking the pressure of public demand. It needs to be borne in mind that these are political bodies and function with the potential strengths and weaknesses of such bodies. The best way to get their constructive engagement is to ensure a high level of public awareness of their responsibilities.

Felt need for community engagement

PRIs' potential for improving service delivery was widely recognized by staff at all levels. District officials considered the participation of PRIs to be very important—with an overall score of 3.7 out of a possible 5—in the delivery and oversight of environmental sanitation services generally, and they attached even greater importance to their involvement in water supply, drainage and solid waste collection specifically, with

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scores of 4.3, 4.0 and 4.2 respectively, out of 5 (Table 2). State officials rated the overall importance of PRI involvement in environmental sanitation services at 4 out of a possible 5. District officials additionally pointed out their own flexibility to engage PRIs—and the fact that they are expected in principle to do so—in assessing needs, implementing plans and monitoring progress in their area.

In *practice*, however, respondents at all levels agreed that the extent and quality of such collaboration is very low, despite recognizing the potential of such collaborations. At the State level, the difference in responses between questions on the *importance* and the *actual extent* of community involvement was 4.27 vs. 2.38; at the District level, the difference was 3.8 vs. 1.2 (see also Table 3); and among field workers, the prevailing opinion was that PRIs and the forums for community consultation which they periodically organize (such as *gram sabha* meetings) are not used by the health department to a significant extent, and that PRIs and their members (*e.g.*, the sarpanch) themselves play a correspondingly limited role in public health activities.

The difference between these two sets of responses—the former on the potential and importance of community involvement, and the latter on its actual extent—raises questions about the effectiveness of India's recent efforts to decentralize and increase community involvement in public service delivery. In the Indian context, village-level PRIs are well-placed to coordinate and contribute to the work of health and sanitation agencies active at the local level. Yet, as pointed out by respondents from all levels and further discussed below, the extent of this involvement remains very limited, notwithstanding widespread recognition of its potential on the part of health workers and officials.

We identify two areas of possible improvement in this regard: first, increasing the range and depth of partnerships with PRIs in health and sanitation activities; and second, strengthening the role of PRIs as public watchdogs and monitors of government performance. We discuss these below.

More partnership and more responsibility

Much has been written about the informational advantages of local governments and community groups and how these can be used to improve service delivery at the local level. But these services—the responsibility for which lies squarely in the public sector, as explained earlier—can only benefit from local information in the presence of effective partnerships between government actors and local institutions. Our data indicate that these partnerships are weak. PRIs—along with women's groups and other formal community-based organizations—are expected to help implement programs as directed by the health department, but their involvement is not sought in developing ideas or evaluating the effectiveness and relevance of such programs. (See the earlier section on administrative issues for more details.) They are, for example, routinely asked to implement health education programs, but their feedback is not sought on how to develop these programs or to tailor their messages to local circumstances.

More generally, almost no attempt is made to consult with grassroots PRIs or to participate in the community forums they organize. When such engagement does occur, it is typically carried out with a focus on information *transmission*—i.e., telling the community what it should do—rather than consultation and partnership. There is also little delegation of functions, with only a handful of disease control tasks being formally assigned to PRIs for implementation on a day-to-day basis. (Indeed the majority of substantive interaction between health officials and PRIs occurs during periodic, nationally sponsored activities such as National Immunization Days, or during emergencies, disease outbreaks and natural disasters.) This further deprives disease control programs—especially those that need to be carried out on a routine basis, such as surveillance, garbage disposal and vector control—of the advantages of local information from PRIs.

The above assessment points to two strategies. The simpler of these would involve using existing community forums—and a larger number of direct consultations between health officials and PRIs—to engage communities in a two-way dialogue on disease control. Such consultations would focus not only on the role of PRIs and community members in disease control activities—a role which has the potential to be expanded, as will be discussed below—but also on *their* assessment of the health department's own activities in this area. Similar relationships might also be cultivated with community organizations other than PRIs, and with NGOs. But their participation is similarly patchy. Respondents stated that district authorities make little sustained effort to build public constituencies for disease control. They maintain a list of names and contact details for individuals and groups involved in health-related issues who can be drawn on to volunteer or provide *ad hoc* assistance when required for a specific purpose; but they seldom seek feedback from these individuals or groups regarding their *own* performance, nor do they maintain contact or sustain these linkages on a more routine basis.

A second, more comprehensive, approach would involve engaging PRIs in more of the day-to-day activities of disease control. Around 60 percent of field and District level staff reported PRIs to be both capable and ready to mobilize for public health action. Responses from village-level PRI members themselves indicated their eagerness to be more active in disease control activities, some of them getting so desperate at times that they reported unilaterally carrying out *ad hoc* activities such as antivector spraying from time to time. Although PRIs are formally entrusted with many public health functions and control substantial shares of the district budget, much of this is controlled by the higher echelons of the PRIs (district and subdistrict level bodies, often headed by administrative service personnel), rather than devolved to the grassroots level. These lowest level PRIs could assume a wider range of such functions, concomitant with their capacities as well as with those of higher authorities to support and monitor them. However, before extensive delegation occurs, it is important to build implementation capacity on the part of PRIs as well as support capacity on the part of district officials. Experience from other states suggests that relatively small investments in training and sensitizing grassroots

PRIs — and inviting them, for example, to attend some of the training sessions given to other staff — can result in their giving much more priority to health activities.[23]

To be effective, such devolution would require a simultaneous three-pronged effort: to build up support and oversight capacities at the higher levels; to provide the grassroots PRIs with the skills and authority necessary to execute their responsibilities effectively; and to encourage their constituents to hold them accountable for the delivery of these services. Without adequate support and sufficient authority—*e.g.*, regulatory enforcement and the authority to coordinate the work of outreach staff from different agencies—even the most motivated PRIs will find themselves unable to effectively implement even their current, limited range of responsibilities. Without effective accountability—*e.g.*, in the form of accountability pressures from the public—the problem of weak service delivery will simply move from government agencies or higher PRI echelons to grassroots-level PRIs. But strengthening these areas could result in grassroots PRIs becoming effective overseers of *routine* disease control service delivery—*e.g.*, in areas such as water supply, drainage, vector control and waste disposal—rather than simply participating in periodic events such as NIDs; and this in turn could generate substantial health impacts, given the impact of these services on diseases such as diarrhea and malaria.

Public accountability

Another area where grassroots PRIs could be strengthened is in monitoring government performance. There is little accountability to the public in Karnataka's public health system and few consequences for failing to meet end-users' expectations regarding service standards. Almost no respondents, at any level of the service hierarchy, stated that they are accountable in practice to the community or nongovernment stakeholders, and the consequences of failing to meet standards or public expectations are not seen to be grave. Except in the better-endowed district, the consensus among staff was that it is uncommon for staff to be poorly evaluated or disciplined based on inputs from the public. Nor do they face significant disapproval from peers or colleagues under these circumstances. Not surprisingly, field staff felt that they were not appreciated by the communities they served.

What explains these accountability failures? They result from deficiencies of information and voice: *i.e.*, a lack of public knowledge of expected performance standards, of opportunities for public input to decisionmaking and of channels for recourse in the face of grievance. Information is not made available to the public for them to monitor the quality of service delivery, nor are they made aware of what is at stake for them. All categories of respondents stated that the public is not very knowledgeable of the standards governing the delivery of services by public health authorities. Service standards are not specified or published, nor is there any public consultation on these standards, nor are budget reports or performance audits made available to village PRIs or

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23. Maitreyi Das (1995) and personal communication.

to civil society groups.[24] The only evaluations of service performance that have been made available to users in the last 3 to 5 years are performance benchmarks comparing previous figures from the same community for a limited range of output targets including family planning measures and immunization coverage.

Few attempts are made to solicit the views of end-users. Formal sources of voice-feedback such as client surveys, social audits, and report cards are not in routine use in Karnataka, though a NGO in the state has carried these out in the state capital of Bangalore, reportedly to good effect (Paul 1998). District and state officials felt that various accountability practices were in place, but the only one they could identify with any certainty was the keeping of performance measures relative to targets. Some of the officials mentioned participatory evaluations and client feedback surveys, but field workers were not aware of these and supporting records and documentation could not be found.

On voice channels more generally, all district- and state-level officials interviewed felt that reasonable provisions exist for the public to express their grievances, and that action is taken when grievances are filed. Formal channels for registering complaints exist. Users whose expectations have not been met may formally register a complaint with the relevant authorities or make direct public complaints to their village or ward PRI representatives or the officials concerned. *Lok adalats*, for public hearings, are in place. District and state officials—though not field staff—felt that these mechanisms were 'mostly' credible as ways of ensuring providers' accountability. But all respondents agreed that in practice, the major modes of voicing dissatisfaction were *not* these formal channels, perhaps because of low responsiveness to official complaints; and that civic forums—such as the periodic PRI meetings in villages and urban wards—were more commonly used for this purpose instead. Other nonformal channels for voicing grievances were also identified, such as writing editorials in the newspaper or organizing politically; but staff at all levels pointed out that given end-users' low information on service standards as well as their historically low experience of disease control services, public expectations remain low and complaints are thereby limited.

Elected village representatives had a less positive view of the effectiveness of these accountability mechanisms. PRIs make efforts to hold public officials accountable to people in their constituencies: efforts which state and district officials—though notably not front-line staff—felt were effective in making them more responsive. However, some village PRI representatives were unaware of the existence of any mechanism for redressing public grievances. This situation may be changing, however, as front-line staff stated that they 'sometimes' felt under the scrutiny of local political executives. Other forms of community organization and NGOs are not seen to be as effective ways for the public to increase accountability, and are not used much for this purpose.

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24. The use of funds allotted to PRIs is periodically audited, usually by officials of the state Panchayati Raj and Rural Development Department to see if norms have been followed. The scope of these audits varies; some are 'expenditure audits' that examine whether the money has been spent for its intended purposes, while others are 'performance or proprietary audits' that examine whether the objectives of the allocation were achieved or if the expenditure was even justified in the first place.

5. *Implementing public health laws and regulations*

The success of disease control efforts depends heavily on having appropriate public health laws and regulations in place, and on the effectiveness with which these are enforced. The legal framework for public health in India is fairly adequate (Indian Law Institute 2002). While some aspects of the legal framework need updating, the real shortfalls lie in the *enforcement* of these laws and regulations. Only part of this can be ascribed to the well-documented resource shortages and slow processes of judicial enforcement in India. Even more basic reasons, specific to the area of public health regulations, are also at play.

First, enforcing public health laws and regulations occupies a very low priority amongst the tasks assigned to district health authorities. District health authorities said that they have little access to information about public health laws and regulations. With the exception of laws on water quality and food handling, they stated that they do not have ready access to laws and regulations on other health-related areas, for example those relating to sewage, drainage, solid waste disposal and sanitary housing conditions. They were also unable to identify which agencies—including their own—are responsible for enforcing these laws and regulations, nor could they state with any confidence the extent to which these agencies (again, including their own) have the legal authority to pursue violations that have an impact on public health. Nor do they routinely assess compliance with laws and regulations, or attempt to determine the impact of these laws on the health of the community.

Second, little if any effort is made to inform citizens or business enterprises about key public health laws and regulations so they can understand their rationale and how to comply with them. A *de facto* system operates instead, whereby people seek information on the regulations most likely to be enforced, such as zoning and pollution control laws, but *not* laws which they know are unlikely to be enforced, such as most other public health laws. Nor is effort made to obtain feedback on difficulties that may be faced in compliance, and sources of resistance (or support) to the laws and regulations. As with most other aspects of disease control, the engagement of civil society and specific stakeholders is not actively sought — though when they become spontaneously galvanized they can be effective in improving their environment (Bangalore citizen's group). Yet enforcing public health laws requires building strong constituencies of public support, based on extensive dissemination efforts to inform the public about the benefits of the laws and the consequences of transgressing them. These issues are especially acute in developing countries because the operation of these laws—*e.g.,* preventing people from committing public health "nuisances", licenses and permits, health and safety standards and inspections—can impose severe constraints on the livelihoods of people already close to the margin of subsistence.

These failings occur against the backdrop of the well-recognized problems in India's police and judicial systems. As with other aspects of policing and regulatory enforcement in any setting, the kind of unmonitored, face-to-face encounters on which enforcement is

typically based creates much potential for corruption. This can only be countered by having well-established and well-publicized procedures for holding agencies and their individual staff accountable to the public.[25] Much needs to be done on this front in India if its attempts to increase the enforcement of public health regulations are not merely to increase the potential for corruption.

To illustrate the multiplicity of obstacles to effective enforcement when it is such a low official priority, consider the circumstances of a food inspector in the better-endowed district surveyed:

> I was trained as a food inspector, but since joining service I have been asked to focus primarily on supervising the work of the field staff—whose duties are to implement the vertical programs from the central government [e.g., malaria control, reproductive health services] and state-sponsored programs. I am evaluated largely on the basis of my supervisory work and my back-up support to whichever programs have priority at a particular time. I have little opportunity or incentive to conduct food inspections, as these are of low priority.

> When I conduct a food inspection, I take the sample to the laboratory for testing, and if it turns out to be adulterated I file a case. But it is not easy to prosecute a case. The courts turn me away, saying that they deal with important issues not trivial things like this. I have to go repeatedly to the court to even initiate proceedings. After that, it can. take months and sometimes years before the case is finally dealt with. I feel very frustrated with the obstacles to doing what I trained for, but there is little I can do about it. And no, we do not test for food hygiene, only adulteration [e.g., when food vendors substitute ash for tea].

Discussion and Recommendations for Action

Karnataka's public health system has excellent ingredients in terms of personnel, skills, infrastructure, and outreach capacity. Run through a strong command-and-control system, the administration has impressive capabilities in organizing campaigns and crisis management. On such occasions, the administration "swings into action", drawing on all available resources and working closely with other agencies and the private sector. This is evidenced in its successful implementation of immunization campaigns which draw skillfully on the media, community groups, civil society and the entire apparatus of government agencies—in order to reach the entire population irrespective of logistical and behavioral obstacles. Outbreaks of severely contagious diseases are similarly met with concerted action to prevent them from spreading. But the organizational structure and culture of the system are less well-suited for the more collaborative, consultative and integrated range of activities required to *prevent*, rather than respond to, outbreaks and emergencies.

A system which is so good at reactive work can, with modest organizational reforms, also be much more proactive in assuring the tasks involved in routine disease control. In India, many of the ingredients needed for routine disease control are already in place: for

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25. See for example the case studies in Das Gupta and Khaleghian (eds.), forthcoming.

example, a country with the ability to conduct continuous statistical data collection and analysis in every corner of the country, can surely manage a good program of disease surveillance and associated local data analysis. We identify below a selection of organizational changes that might improve the management of disease control activities. Some of these are generic to the public administrative system as a whole, where reforms are needed to increase its flexibility and responsiveness, but this is a longer-run goal. Also, unlike most other public services, disease control requires a very complex range and intensity of coordination and collaboration between multiple actors. We therefore focus on some issues specific to disease control and which are amenable to quick change and therefore have the potential to rapidly improve health outcomes.

The first set of issues relates to the nature of vertical links in the administrative hierarchy. Disease control activities require that higher echelons provide strong technical support and programmatic guidance to subordinate levels; that they carry out essential functions such as procurement and interjurisdictional coordination; and that they provide effective oversight and assume residual responsibility for the performance of the system as a whole. At the same time, it requires them to permit some flexibility for lower echelons in areas of *their* comparative advantage—*e.g.,* program development, management and implementation—so they can respond to local needs and constraints in the most efficient way. In many ways the situation is analogous to the separation of irrigation management in the Republic of Korea into three levels, each with a substantial degree of autonomy: policymaking at the top, technical and engineering at the intermediate level, and local canal management at the grassroots (Wade 1997). In Karnataka, however, we find evidence of the opposite: namely, centralized policy making processes involving little consultation with implementing staff or end-users; substantial restrictions on the fiscal flexibility of states and districts; erratic budgetary allocations and transfers; and disincentives for innovation.

How might these problems be resolved? Expanding managerial autonomy at the district level and below is one option. As Grindle (1997: 491) points out in her multicountry study of high performing public agencies in developing countries, a certain degree of autonomy—especially in personnel management—can provide a facilitating environment for managers to develop a positive organizational climate, and is consistently associated with good performance. Allowing managers a little scope for experimentation with resource allocation and financing mechanisms might help ease the problems associated with fiscal centralization, such as the irregularity of transfers and associated disruptions in paying staff or suppliers. It might also promote innovation, which is currently weak due to managers' perception of their superiors' disapproval. Even modest forms of autonomy could be helpful. For example, keeping staff motivated and performance-oriented is difficult when local managers are unable to use performance evaluations to reward good staff, and when nonmonetary incentives are not institutionalized. Also relevant is the limited role of technical staff in overseeing program implementation, especially since staff from the administrative services are transferred between departments and institutional memory and expertise are seldom allowed to develop.

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The question of autonomy is not simple, however. Peters and others(2002) point out that even when autonomy has been offered to Indian states, *e.g.,* in procurement practices, they have not uniformly accepted it. Concerns about the increased likelihood of corruption, the impact of capacity constraints and the complexity of monitoring have also been raised, both in principle and with specific reference to the Indian context. But the current situation—in which centralization is the norm and front-line managers have their hands tied in almost all respects—is neither sustainable nor well-suited to the disease control tasks that district officials are expected to shoulder. Experimentation with reforms should therefore be considered a priority, with the objective of finding the best balance between central control and managerial autonomy while ensuring that service objectives are better met. Active encouragement of monitoring by end-users and more broadly by civil society should form a pillar of such efforts.

A second set of issues relates to the absence of positive incentives for health worker performance, especially for front-line workers. At present, promotional opportunities are constrained, interactions with managers are command-based and hierarchical, and recognition for exceptional performance is virtually nonexistent for frontline workers. Even minor improvements to the current situation—such as asking field staff for their suggestions on program-related issues, or providing an expanded range of training options, or identifying and publicizing best practices among front-line staff—could pay substantial dividends in terms of worker motivation and performance. Complicated incentive schemes and monetary incentives are unlikely to be necessary, nor are politically complicated interventions such as changes in civil service rules regarding promotion and advancement. What is required as a first step is to institutionalize a small number of nonmonetary incentives, to engage in small-scale experiments to see which incentives work best, and to scale up from there. In spite of their difficult work circumstances, the *esprit de corps* and commitment to their work among front-line staff is remarkably strong. A small set of relatively simple interventions might be sufficient to galvanize this commitment and translate it into improved performance.

A third set of issues relates to the effective coordination of services and resources. Well established forums are said to be in place for intersectoral coordination in program planning and implementation. In practice, however, coordination is highly inadequate except during emergencies and special campaigns, apparently because staff are not expected to give priority to the more routine aspects of their public health work: including the need for ongoing collaboration. While senior administrative officials are supposed to oversee these routine collaborations, it is difficult to see how they can be expected to prioritize this on a regular basis, given the multiplicity of services *other* than health for which they are also responsible. Also of concern is the fact that staff apparently do not consider as potential collaborators departments and agencies responsible for key disease control activities *outside* the formal health sector, such as those relating to food hygiene, water supply, sewage and sanitation; and the absence of any agreement about the role and authority of the health department to coordinate with other departments on matters affecting the public's health.

How might these issues be resolved? A certain degree of organizational reform is probably necessary. Relying on *ad hoc* coordination between departments and on senior public administrators to facilitate interdepartmental dialogue is inadequate to meet the challenges of disease control. As a first step, departments need more awareness of their potential collaborators and the functions for which each agency is responsible: within government at first, and expanding to actors outside of government at a later stage. A clear understanding of their *own* responsibilities will also be essential, for obvious reasons. Having established who is responsible for what, focal points for collaboration should be selected for each kind of activity—surveillance, food hygiene, drainage *etc.*— and patterns of collaboration should be institutionalized.

The role of senior administrators in such a system would not be to bring together departments and act as the nodal point of collaboration in a personal way; rather, it would be to make sure that the institutional framework of collaboration is established and promoted and that the relevant agencies are nurtured to accept these responsibilities for themselves. The question of residual responsibility—*i.e.,* where the buck finally stops if an agency fails to perform—should also be addressed, with appropriate institutional mechanisms to make sure that service failures are detected early and the assumption of residual responsibility doesn't occur only after a crisis or outbreak is already well established. Put simply, the state government needs to do three things: first, to clearly identify who is responsible for what, and make sure they know their own responsibilities; second, to define and institutionalize patters of routine collaboration; and third, to make a specific agency responsible for oversight and residual responsibility for the effort as a whole, and to make sure this oversight is carried out effectively.

This also raises the question of community involvement. The concept of community involvement is universally viewed as important. In principle, the *panchayati raj* system is designed to enable strong grassroots participation through elected community bodies coupled with good technical and managerial support. It is also supposed to serve as a nodal point for intersectoral collaboration, especially by higher-level PRIs at district or city levels. PRIs have the potential to provide many of the ingredients necessary for effective disease control services at local level: access to local information; vertical and horizontal coordination between service agencies; close ties with communities; and scope for public accountability to their electorate. In practice, however, our study indicates that higher-level PRIs function essentially as an extension of the public administration, while grassroots PRIs—those with the greatest access to local information and local opinions— are not given clear authority to coordinate even the simplest disease control tasks locally. Consequently, all respondents felt that PRIs have little involvement in these activities, and grassroots PRIs in particular expressed frustration about this. To convert the potential of PRIs into actuality is a central task of improving disease control services, and needs to be undertaken with considerable thought. We have summarized in earlier sections several possible approaches to this problem.

A third set of issues relates to public outreach and public accountability. Since disease control is a silent activity whose success is marked by the absence of events, it intrinsically attracts less political support than curative health services that provide more

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tangible and immediate results. To address this requires a concerted effort to build public awareness and demand for these activities, such that people can monitor and hold accountable their elected representatives and officials accordingly. If communities come to value sanitary waste disposal and understand its importance, they will make sure it takes place; but if they don't, then devolving waste management to PRIs will probably lead to its neglect, both by the PRIs as well as by the population. This reinforces the well-established point that voice and information must go hand in hand.[26] The PRI system provides opportunity for the exercise of voice through electoral and other mechanisms such as the periodic *gram sabha* meetings. But without information, these opportunities do not automatically translate into accountability pressures on local administrators and political executives. Providing this information—*e.g.,* on expected performance standards, on the health consequences to households and communities of performance failures, and on how grievances can be voiced and remedied—is therefore another area where simple interventions might lead to improved performance, particularly since opportunities to exercise voice are already established to a certain extent through the PRI system.

How might this be operationalized? Direct intervention by higher authorities is one option, whereby information campaigns are spearheaded by administrators above the district level. This has proved successful in other settings, most famously the state of Céara in Northeast Brazil (Tendler and Freedheim 1994). In India itself, the media has been an effective instrument in promoting specific public health campaigns such as national immunization days. It might also be used for broader awareness-raising on what households, communities, public servants and elected representatives should be doing—and what each should expect of the other—in disease *prevention*. There have also been several experiments to increase public accountability in India, such as report cards, social audits, citizens' charters and freedom of information legislation. These have been implemented with some success in Karnataka and other states but have yet to be used in the context of public health. Given our findings on the weak responsiveness of public administrators to public opinion or to grievances expressed by PRIs or civil society we also argue for reforms to improve accountability more directly, *e.g.,* by creating among administrators a more strongly vested interest in meeting citizen and community demands. Both approaches will be necessary for accountability to improve.

A fourth set of issues relates to the enforcement of public health regulations, to protect the public from health threats. India has more than its fair share of regulations; it has expertise in regulatory enforcement and a an existing body of public health law. But public health is given so little priority that district health authorities had not even seen most of the public health regulations that relate to their work. Nor are efforts made to inform people (and public officials) about the laws and regulations—let alone build public support for ensuring that they are implemented. Such information dissemination can raise compliance and also draw public attention to silent breaches (or breaches rendered silent by bribes) that might otherwise be neglected.

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26. Paul (1998); Mehrotra and Jarrett (2002).

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How might these problems be addressed? Improving the speed and efficiency with which India's judicial system processes cases, and reducing the prevalence of official corruption require considerable attention in their own right. Meanwhile, some more modest interventions should be considered. Information dissemination is of the essence, coupled with stronger efforts to enforce regulations. However, in doing this, it is important to learn from the wide range of successful experiences elsewhere, on controlling the scope for the corruption and public harassment associated with front-line enforcement efforts. This makes it crucial to have a stronger emphasis on social accountability and public monitoring. As Kaufmann (2003) points out, efforts to control corruption directly—e.g., through anticorruption campaigns—have not been uniformly effective, often because of the weak social foundations on which the interventions were based. Over reliance on judicial intervention is also unlikely to be successful, given existing burdens on India' legal system. Thus, both for pragmatic and conceptual reasons, efforts to improve public oversight over enforcement—as previously described for service delivery itself—are likely to be an important first step.

Our findings recall those of Sen's analysis of food security in India, in which he observes that while India has successfully eliminated famines (the food security equivalent of an uncontrolled disease outbreak)—it continues to suffer from chronic shortages of food and high levels of background malnutrition (Dreze and Sen 1991). Analogously in the health sector, India successfully mobilizes emergency responses to control disease outbreaks, but permits high levels of endemic disease to prevail. India needs to shift from a largely reactive to a more proactive approach to disease control, which is the essence of effective disease prevention. The policy fulcrum for improving performance in this direction is organizational change: i.e., efforts to use existing ingredients more effectively, and to orient policy processes, planning activities and implementation arrangements toward disease prevention rather than outbreak response. Awareness of this need is growing in India, and recent high-level reports from the central government and state governments have highlighted the need for a revitalized disease control system.[27] The present study indicates how modest organizational changes can result in large benefits to population health.

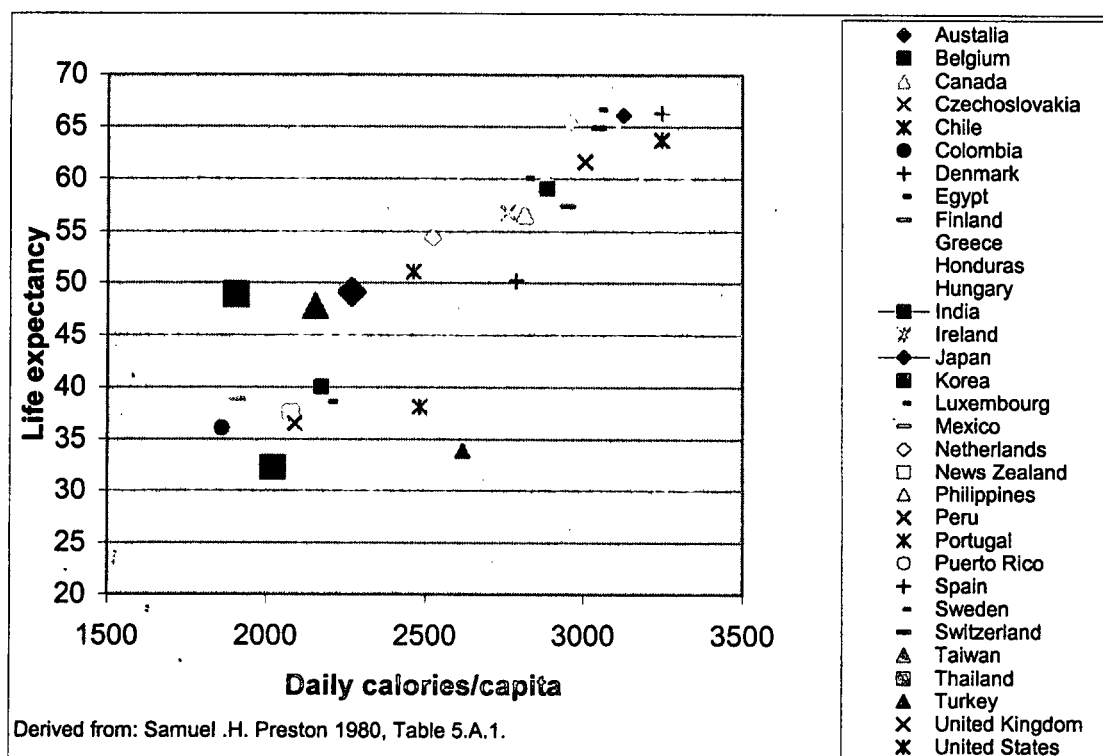27. Government of India (1996), Government of Karnataka (2001).

Table 1. District's perceived role in personnel management decisions

	District respondents	State respondents
Staff recruitment	0.53	0.22
Staff evaluation	0.83	0.93
Rewarding staff	0.16	0.00
Disciplining staff	0.84	1.00

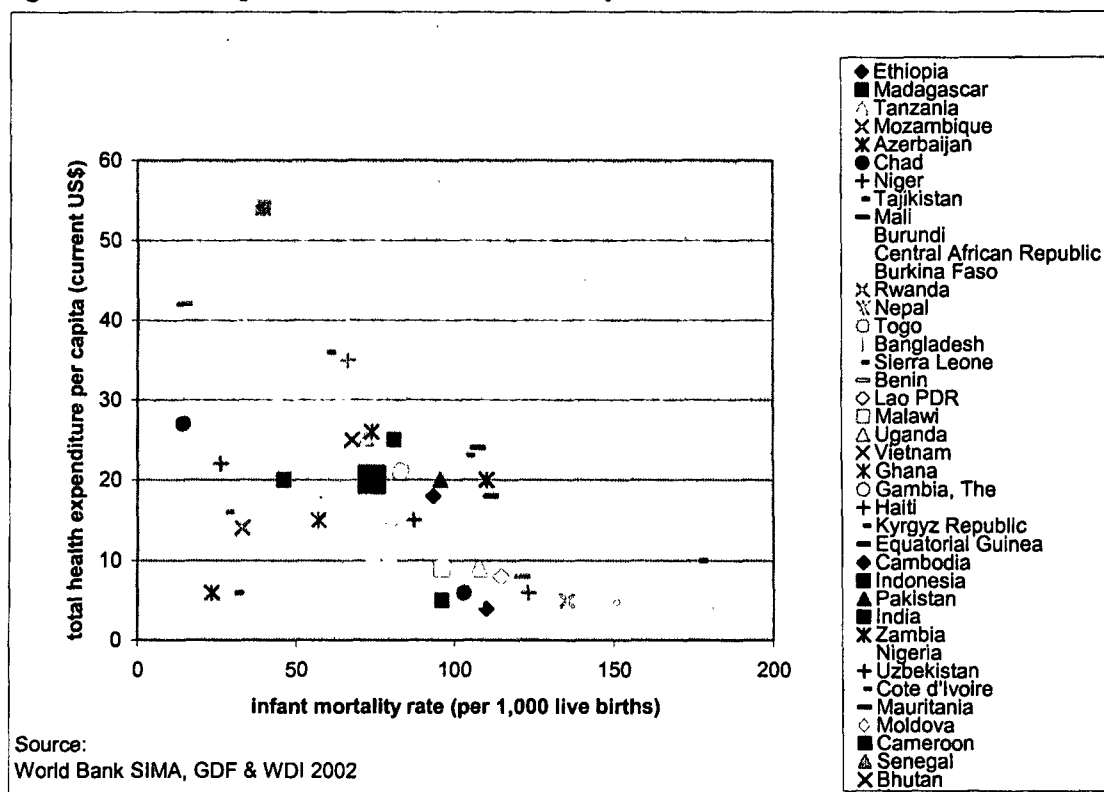## Table 2. Intersectoral collaboration and PRI involvement in environmental sanitation: district responses

	Intersectoral collaboration		PRI participation	
Service	Perceived importance	Actual extent of collaboration	Perceived importance	Actual extent of participation
Drinking water	4.6	2.4	4.3	2.8
Sewerage	3.8	1.8	2.1	1.7
Drainage	3.5	1.9	4.0	2.2
Solid waste collection and disposal	3.0	1.6	4.2	1.8
Vector control	4.0	1.9	3.6	1.5
Oversight of:				
~ food processing/retail	3.3	1.6	3.4	1.6
~ slaughterhouses	2.9	1.3	3.0	1.5
~ cattle-keeping practices	3.0	1.3	2.8	1.2

Key: 1 = no/none, 5 = very high

Figure 1. Life Expectancy and daily per capita caloric availability, 1940: Japan and its

Derived from: Samuel .H. Preston 1980, Table 5.A.1.

colonies compared with India and other countries

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Figure 2. Health Expenditure and Infant Mortality in low-income countries

Source:
World Bank SIMA, GDF & WDI 2002

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